

PATENT ABSTRACTS OF JAPAN

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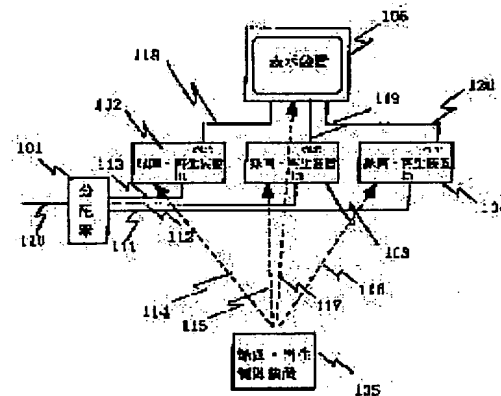
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(54) VIDEO RECORDING/REPRODUCING CONTROLLER, VIDEO RECORDING/REPRODUCING DEVICE AND VIDEO RECORDING/REPRODUCING SYSTEM USING THEM

(57)Abstract:

PROBLEM TO BE SOLVED: To efficiently perform video recording reservation of plural programs without the waste and the time as much as possible by using plural video recording/reproducing devices.

SOLUTION: A received video signal 110 is distributed by a distributor 101 to be inputted to respective video recording/reproducing devices through signal lines 111-113. A video recording/reproducing controller 105 automatically adjusts the schedule of the video recording reservation of respective video recording/reproducing devices when the information related to respective video recording/reproducing devices in addition to the information required for the video recording reservation are inputted, and thereafter, transmits the video recording reservation data to respective video recording/reproducing devices through the signal lines 114-116. Related to the video recording reservation situation at this time, the controller 105 sends an instruction of display switch control to a display device 106 through the signal line 117, and selects a video signal from the answering video recording/reproducing device from the video signals 118-120 to display the video to be confirmed. The video recording/reproducing devices 102-104 record specified channel videos/audios when the start times of the reserved programs come.



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CLAIMS

[Claim(s)]

[Claim 1]Recording and a regeneration control device characterized by comprising the following
A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

[Claim 2]Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording and the regeneration control device according to claim 1 being any one or more of a connection state between recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, and recording and playback equipment, and the connection states between recording and playback equipment, and a display.

[Claim 3]Recording and playback equipment which is provided with the following, receives a control signal from recording and a regeneration control device according to an identification code, and is characterized by performing recording and playback in alignment with a recording schedule.

A reception means which receives a control signal from recording and a regeneration control device.

A channel selection means to tune in a program.

An image and a voice recording reproduction means which records video information or speech information

An identification code setting-out means to set up a self identification code.

[Claim 4]Have the following and a control signal from recording and a regeneration control device is received according to an identification code, Recording and a reproducing system characterized by performing recording and reproduction motion with recording and playback equipment while it is constituted by recording and playback equipment which performs recording and playback in alignment with a recording schedule and recording and a regeneration control device perform organization and management activities of a recording schedule.

A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

A reception means which receives a control signal from recording and a regeneration control device which has a transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment, and recording and a regeneration control device.

A channel selection means to tune in a program, an image and a voice recording reproduction means which record video information or speech information, and an identification code setting-out means to set up a self identification code.

[Claim 5]Recording and the reproducing system according to claim 4 with which two or more sets are connected to one set of recording and a regeneration control device, and, as for recording and playback equipment, one set of said recording and regeneration control device is characterized by said thing [carrying out individual control of two or more recording and playback equipment of a stand] using an identification code.

[Claim 6]Provide a means of communication in which bidirectional communication is possible, and by a control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, Recording and the regeneration control device according to claim 1 or 2 characterized by being ability ready for receiving about information for recording schedule organization from recording and playback equipment.

[Claim 7]Recording and the playback equipment according to claim 3 characterized by being ability ready for sending about information for recording schedule organization while providing a means of communication in which bidirectional communication is possible and receiving a control signal from recording and a regeneration control device.

[Claim 8]Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording and the playback equipment according to claim 7 which is any one or more of a connection state between recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, and recording and playback equipment, and the connection states between recording and playback equipment, and a display.

[Claim 9]Have the following and a control signal from recording and a regeneration control device is received according to an identification code, Recording and a reproducing system characterized by performing recording and reproduction motion with recording and playback equipment while it is constituted by recording and playback equipment which performs recording and playback in alignment with a recording schedule and recording and a regeneration control device perform organization and management activities of a recording schedule.

A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program.

A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit.

By a control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, While receiving a control signal from [from recording and playback equipment] recording and a regeneration control device which has a means of communication in which bidirectional communication which is ability ready for receiving about information for recording schedule organization is possible, and recording and a regeneration control device, A means of communication in which bidirectional communication which is ability ready for sending about information for recording schedule organization is possible.

A channel selection means to tune in a program, an image and a voice recording reproduction means which record video information or speech information, and an identification code setting-out means to set up a self identification code.

[Claim 10]Recording and the reproducing system according to claim 9 with which two or more sets are connected to one set of recording and a regeneration control device, and, as for recording and playback equipment, one set of said recording and regeneration control device is characterized by said thing [carrying out individual control of two or more recording and playback equipment of a stand] using an identification code.

[Claim 11]Recording and the reproducing system according to claim 5 or 10, wherein two or more recording and playback equipment can assign a control code which has a different control

code for every recording and playback equipment, or is different.

[Claim 12] Information for recording schedule organization A model of recording and playback equipment, a function of recording and playback equipment, Time which can be recorded or capacity of performance of recording and playback equipment, existence of wearing of recording media, and recording media with which it is equipped, Non-picture recording times or capacity of recorded time of recording media with which it is equipped or capacity, and recording media with which it is equipped, Recording reservation information including a kind, a recording channel, and picture recording times of recording media with which it is equipped, Claim 4 or 5 being any one or more of a connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, or recording and a reproducing system given in either 9 thru/ or 12.

[Claim 13] It has a memory which memorizes a control code for every display, and recording and playback equipment, and a connection state between each recording and playback equipment, and a display, Claim 1 transmitting a control signal to a display so that a video voice signal from recording and playback equipment which specified playback may be chosen simultaneously with playback and may be displayed with a control signal from recording and a regeneration control device, or recording and a regeneration control device given in 2 or 6.

[Claim 14] A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, . Have a control code which is provided with an identification code setting-out means to set up a self identification code, and is different for every recording and playback equipment. Or two or more recording and playback equipment which can assign a different control code, A display which has at least a display control part which controls a switch based on a control signal from recording and a regeneration control device which won popularity in a receive section which receives a control signal from recording and a regeneration control device, and a receive section, and changes an input of an image and a sound, A data input means which inputs information for recording schedule edit about two or more recording and playback equipment, and reservation of picture recording of a program, A recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on information for recording schedule edit, A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment, A video voice signal from recording and playback equipment which had a memory which memorizes a control code for every display, and recording and playback equipment, and a connection state between each recording and playback equipment, and a display, and specified playback with a control signal from recording and a regeneration control device, Recording and a reproducing system which makes it possible to comprise recording and a regeneration control device which transmits a control signal to a display so that it may choose simultaneously with playback and may display, and to change a display of a display according to playback of an image from the appointed recording and playback equipment.

[Claim 15] A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, A memory which memorizes a connection state and reservation of picture recording between a control code for every recording and playback equipment, and each recording and playback equipment, Recording and playback equipment which it has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, and can control recording and playback of recording and playback equipment of other slave sides as a master side device.

[Claim 16] characterized by comprising — on the other hand — recording and playback equipment of a slave side — a time check — using recording and playback equipment without a means, a time check of master-side recording and playback equipment — recording and a reproducing system recording by transmitting a control signal to a device of a slave side from a master side if a means performs schedule management of recording and playback of each recording and playback equipment of all the slave sides and it becomes picture recording times A channel selection means to tune in a program.

An image and a voice recording reproduction means which records video information or speech information

A memory which memorizes a connection state and reservation of picture recording between a control code for every recording and playback equipment, and each recording and playback

equipment.

Master-side recording and playback equipment which has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, A reception means which receives a control signal from master-side recording and playback equipment, A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, having an identification code setting-out means to set up a self identification code, receiving a control signal from master-side recording and playback equipment according to an identification code, and comprising recording and playback equipment of a slave side which performs recording and playback in alignment with a recording schedule — master-side recording and playback equipment — a time check — a means.

[Claim 17]Recording and a regeneration control device which is provided with the following, constructs a schedule of recording and playback of two or more recording and playback equipment based on reservation of picture recording, and is characterized by a thing which perform recording and reproduction control of each recording and playback equipment, and which a matrix switch is controlled and is both done for the switchover control of the input and output of a video voice signal.

a time check — a matrix switch which changes input and output of a means and two or more video voice signals.

A schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording.

A control means which controls two or more recording and playback equipment.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

[Claim 18]Have the following and a schedule of recording and playback of two or more recording and playback equipment is constructed based on reservation of picture recording, Recording and a regeneration control device which performs recording and reproduction control of each recording and playback equipment and which controls a matrix switch and both carries out switchover control of the input and output of a video voice signal, A channel selection means to tune in a program, and an image and a voice recording reproduction means which record video information or speech information, Two or more recording and playback equipment provided with an identification code setting-out means to set up a self identification code, It has in a component a display which has a display control part which controls a switch based on a control signal from recording and a regeneration control device which won popularity in a receive section which receives a control signal from recording and a regeneration control device, and a receive section, and changes an input of an image and a sound at least, Recording and a reproducing system making timed recording by carrying out switchover control of the input and output of a video voice signal between two or more recording and playback equipment or two or more recording and playback equipment, and a display by a matrix switch of recording and a regeneration control device.

a time check — a matrix switch which changes input and output of a means and two or more video voice signals.

A schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording.

A control means which controls two or more recording and playback equipment.

A transmitting means which transmits a control signal to each recording and playback equipment by a control code corresponding to each recording and playback equipment.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the recording and playback equipment which makes the timed recording of video information efficiently.

[0002]

[Description of the Prior Art]Conventionally, there is a remote control indicated to JP,5-282736,A as a system which makes timed recording using two or more recording devices. This makes it possible to record continuously, without breaking off an image to two or more magnetic tape about the long form which cannot be recorded on one magnetic tape using two or more recording devices. Hereafter, a conventional example is explained using a drawing. Drawing 19 is a lineblock diagram of the remote control in a conventional example. The specification matter input part which sets up a code for the numerals 1801 to transmit a transmit code only to a specific recording device out of two or more recording devices in drawing 19, As for a control section and 1806, a final controlling element and 1804 are [a transmit code generation part and 1808] transmission sections a storage parts store and 1807 a tape information input part and 1805 the recording ranking input part for which 1802 inputs the recording turn of a recording device, and 1803. First, the specification matter is inputted for every recording device beforehand used from the specification matter input part 1801. In the specification matter input part 1801, the inputted specification matter is memorized to the storage parts store 1806. The turn which a recording device records from the recording ranking input part of 1802 is inputted. In the recording ranking input part 1802, the turn of the recording of the inputted recording device is memorized to the storage parts store 1806. The residue of the magnetic tape inserted in each recording device is inputted as a hour entry by the tape information input part 1804. In the tape information input part 1804, this information is transmitted to a control section. The recording reservation information of the video recording start time of each recording device, recording finish time, a televising channel, etc. is inputted from the final controlling element 1803, and this information is transmitted to a control section in the final controlling element 1803. The recording reservation information of each recording device which read the specification matter and recording ranking for every recording device which were memorized by the storage parts store 1806 in the control section 1805, and was received from this and the final controlling element 1803, The contents of reservation of picture recording over each recording device are determined from the residue of the magnetic tape received from the tape information input part 1804, and information required for the reservation of picture recording to each recording device is transmitted to the transmit code generation part 1807. In the transmit code generation part 1807, each reservation of picture recording and specification matter of a recording device are changed into a transmit code, and it sends to the transmission section 1807. In the transmission section 1807, the received transmit code is made into a predetermined signal system, and it transmits to a recording device. By this, the recording using two or more recording devices of the long form is attained.

[0003]

[Problem(s) to be Solved by the Invention]Anyone records an image easily by the spread of recording and playback equipment, and he can enjoy himself now. Also when using two or more recording devices for the reservation of picture recording of two or more programs, or dubbing, it has come to see mostly. The device of various kinds, such as that to which the recording function of the Hi-Fi (High Fidelity) sound was attached from the thing of BS broadcasting correspondence of recording and playback equipment, and a difference in a recording method, is

provided. In such a situation, when performing reservation of picture recording of two or more programs, with the reservation-of-picture-recording device which human being judges [all] reservation of picture recording of which program should be carried out to which device, and is attached to for every recording and playback equipment. In order to have to reserve a program in a different reservation-of-picture-recording procedure, the problem that time and effort is taken or recording goes wrong is arising. Although it made it possible to record a long form using two or more recording devices in the remote control shown in the conventional example, making full use of two or more recording and playback equipment for the purpose of the relay recording of a long form, recording and playing free and watching two or more programs was not taken into consideration. When processing in which the eliminated place was packed etc. was not completed, and also the contents of recording of two or more sets of recording and playback equipment were checked by monitor or the recorded image was played, the display of the monitor needed to be changed with the help one by one.

[0004] This invention was made in view of the above-mentioned conventional problem, and the 1st purpose is to provide the recording and playback equipment which can make the timed recording of video information efficiently.

[0005] The 2nd purpose of this invention is to provide the recording and playback equipment which can make full use of two or more recording and playback equipment, and can record and play two or more programs free.

[0006] The 3rd purpose of this invention is to provide the recording and playback equipment in which more advanced schedule organization of the edit using the idle time of reservation of picture recording, etc. is possible.

[0007]

[Means for Solving the Problem] In order to solve this technical problem, this invention with a control signal from the outside. [1st] In two or more recording and playback equipment which can perform recording and playback of a program specified as specified time, and recording and a regeneration control device which give directions of recording and playback to those recording and playback equipment with a control signal, An identification code for identifying each recording and playback equipment is assigned to recording and playback equipment, Recording reservation information including a recording channel into which recording and a regeneration control device were inputted from these identification codes and operation input sections, and picture recording times, And a model of each recording and playback equipment, a function, performance, existence of wearing of recording media, Recorded time of time [of recording media with which it is equipped / which can be recorded] or capacity, and recording media with which it is equipped, or capacity, Non-picture recording times of recording media with which it is equipped or capacity, a kind of recording media with which it is equipped, Have a memory which memorizes information for recording schedule organization of a connection state between recording and playback equipment, a connection state between recording and playback equipment, and a display, etc., and an operation input section which receives an input of these information, cancellation of a request to print out files, and elimination, and by a recording schedule management section. Schedule organization of assignment to each recording and playback equipment of recording of a program reserved based on information on a memory is performed, and the timed recording of a desired program is made by transmitting a control signal containing an identification code of each recording and playback equipment to each recording and playback equipment.

[0008] In the 2nd, a means of communication which can communicate both directions [said recording and playback equipment and / recording and a regeneration control device] respectively is provided, When recording and playback equipment return information for recording schedule organization of existence of tape wearing, residual time information, etc. to recording and a regeneration control device, The timed recording of a desired program is made by performing schedule control of recording of each program by the recording and regeneration control device side based on these information, without applying time and effort of an input.

[0009] Two or more recording and playback equipment which can perform recording and playback of a program specified [3rd] as specified time with a control signal from the outside, In recording and a regeneration control device which gives directions of recording and playback to those recording and playback equipment with a control signal, An identification code for identifying each recording and playback equipment is assigned to recording and playback equipment, A memory which memorizes information for recording schedule organization of reservation of picture recording of a program as which recording and a regeneration control

device were inputted from a connection state and an operation input section between these identification codes, and each recording and playback equipment to record, etc., Have an operation input section which receives cancellation of a request to print out files of a program, or a request to print out files and elimination to record, and by a recording schedule management section. Recording for every apparatus for dubbing compilation in consideration of assignment to each recording and playback equipment of recording of a program, an empty condition of each media, idle time of reservation of picture recording, etc. which were reserved based on information on a memory, etc., The timed recording of a desired program is made by transmitting a control signal which performs playback and schedule organization of elimination and contains an identification code of each recording and playback equipment to recording and the playback equipment concerned.

[0010]Recording and playback equipment which performs recording and playback of an image and a sound to the 4th in response to a control signal from recording and a regeneration control device, A display which changes an input of an image and a sound based on a control signal from recording and a regeneration control device, By providing a system which controls a display to choose a video voice signal from recording and playback equipment which constituted recording and a reproducing system from recording and a regeneration control device, and was chosen by a control signal from recording and a regeneration control device. It enables it to perform recording and playback, without changing a display manually one by one.

[0011]In addition to composition shown in the 5th by the 3rd solving means, a means of communication which can communicate both directions [recording, playback equipment, and / recording and a regeneration control device] respectively is provided, It is made to perform schedule control of recording of each program based on these information by returning existence of a tape of recording and playback equipment, and residual time information to recording and a regeneration control device by the recording and regeneration control device side.

[0012]To the 6th, master-side recording and regeneration control device manage picture recording times of recording and playback equipment of all the slave sides, making it record on recording and playback equipment from a master side by transmitting a recording control signal to a device of a slave side, if it becomes picture recording times — a time check of recording and playback equipment of a slave side — a means is made unnecessary, two or more cheap devices are connected, and recording of many programs is enabled.

[0013]By carrying out switchover control of the input and output of a video voice signal between two or more recording and playback equipment, and a display to the 7th by a matrix switcher, It makes it possible to perform playback and a display, and dubbing of a video voice signal between the appointed devices, without increasing an input/output terminal of each recording and playback equipment, and a display.

[0014]

[Embodiment of the Invention]The data input means as which the invention of this invention according to claim 1 inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program into recording and a regeneration control device, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, It has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0015]In recording and the regeneration control device according to claim 1 the invention of this invention according to claim 2, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it

equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0016]The reception means to which the invention of this invention according to claim 3 receives the control signal from recording and a regeneration control device to recording and playback equipment, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, It has an identification code setting-out means to set up a self identification code, the control signal from recording and a regeneration control device is received according to an identification code, and it has the operation that recording and playback in alignment with a recording schedule can be performed.

[0017]The data input means as which the invention of this invention according to claim 4 inputs the information for recording schedule edit concerning two or more recording and playback equipment in recording and a reproducing system, and the reservation of picture recording of a program, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, The reception means which receives the control signal from the recording and the regeneration control device which has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and recording and a regeneration control device, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, and the control signal from recording and a regeneration control device is received according to an identification code, The recording and playback equipment which performs recording and playback in alignment with a recording schedule constitute, While recording and a regeneration control device perform organization and management activities of a recording schedule, recording and playback equipment can perform recording and reproduction motion, and it has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0018]In recording and the reproducing system according to claim 4 the invention of this invention according to claim 5, As for recording and playback equipment, two or more sets are connected to one set of recording and a regeneration control device, and one set of said recording and regeneration control device is made to carry out individual control of two or more sets of said recording and playback equipment using an identification code, It has the operation that a system can be made briefer and the timed recording of video information can be made efficiently.

[0019]In recording and the regeneration control device according to claim 1 or 2 the invention of this invention according to claim 6, Provide the means of communication in which bidirectional communication is possible, and by the control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, By carrying out as [receive / from recording and playback equipment / the information for recording schedule organization], and providing the means of communication in which bidirectional communication is possible, Information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be exchanged automatically, and it has the operation that user-friendliness is improved substantially.

[0020]While the invention of this invention according to claim 7 possesses the means of communication in which bidirectional communication is possible and receives the control signal from recording and a regeneration control device in recording and the playback equipment according to claim 3, It carries out as [transmit / the information for recording schedule organization], information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be automatically exchanged by bidirectional communication, and it has the operation that user-friendliness is improved substantially.

[0021]In recording and the playback equipment according to claim 7 the invention of this invention according to claim 8, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is

equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0022]The data input means as which the invention of this invention according to claim 9 inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program in recording and a reproducing system, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, By the control code corresponding to each recording and playback equipment, to each recording and playback equipment, while being ability ready for sending, a control signal, While receiving the control signal from [from recording and playback equipment] the recording and the regeneration control device which has a means of communication in which the bidirectional communication which is ability ready for receiving about the information for recording schedule organization is possible, and recording and a regeneration control device, The means of communication in which the bidirectional communication which is ability ready for sending about the information for recording schedule organization is possible, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, receive the control signal from recording and a regeneration control device according to an identification code, and the recording and playback equipment which performs recording and playback in alignment with a recording schedule constitute, While recording and a regeneration control device perform organization and management activities of a recording schedule, recording and playback equipment can perform recording and reproduction motion, and it has the operation that the timed recording of video information can be made efficiently, by managing a recording schedule.

[0023]In recording and the reproducing system according to claim 9 the invention of this invention according to claim 10, As for recording and playback equipment, two or more sets are connected to one set of recording and a regeneration control device, and one set of said recording and regeneration control device is made to carry out individual control of two or more sets of said recording and playback equipment using an identification code, It has the operation that operation of reservation of picture recording can be performed the optimal according to the performance of each recording and playback equipment, and a situation.

[0024]. The invention of this invention according to claim 11 has a control code which is different for every recording and playback equipment as for two or more recording and playback equipment in recording and the reproducing system according to claim 5 or 10. Or it carries out as [be / assigning a different control code / possible], and has the operation that a complicated reservation-of-picture-recording schedule is manageable.

[0025]In claim 4 or 5, or recording and a reproducing system given in either 9 thru/or 12 the invention of this invention according to claim 12, The information for recording schedule organization The model of recording and playback equipment, the function of recording and playback equipment, Time which can be recorded or capacity of the performance of recording and playback equipment, the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, Recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, By making it be any one or more of the connection state between recording and playback equipment, and the connection states between recording and playback equipment, and a display, and synthesizing information, including the model of recording and playback equipment, the situation of performance and the media with which it equips, etc., It has the operation that scheduling of finer reservation of picture recording can be performed.

[0026]In claim 1, or recording and a regeneration control device given in 2 or 6 the invention of this invention according to claim 13, It has a memory which memorizes the control code for every display, and recording and playback equipment, and the connection state between each

recording and playback equipment, and a display, The video voice signal from the recording and playback equipment which specified playback with the control signal from recording and a regeneration control device, A control signal is transmitted to a display so that it may choose simultaneously with reproduction and may display, and it has the operation that it cuts that a user gets to know the contents of the reproduction program further by regeneration.

[0027]A channel selection means by which the invention of this invention according to claim 14 tunes in a program for recording and a reproducing system, . Have a control code which is provided with the image and voice recording reproduction means which records video information or speech information, and an identification code setting-out means to set up a self identification code, and is different for every recording and playback equipment. Or two or more recording and playback equipment which can assign a different control code, A display which has at least a display control part which controls a switch based on the control signal from the recording and the regeneration control device which won popularity in the receive section which receives the control signal from recording and a regeneration control device, and the receive section, and changes the input of an image and a sound, The data input means which inputs the information for the recording schedule edit about two or more recording and playback equipment, and the reservation of picture recording of a program, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording inputted based on the information for recording schedule edit, It has a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, and a memory which memorizes the control code for every display, and recording and playback equipment, and the connection state between each recording and playback equipment, and a display, The video voice signal from the recording and playback equipment which specified playback with the control signal from recording and a regeneration control device, It constitutes from recording and a regeneration control device which transmits a control signal to a display so that it may choose simultaneously with playback and may display, and it has the operation that the display of a display can be changed according to playback of the image from the appointed recording and playback equipment, without changing a display manually one by one.

[0028]A channel selection means by which the invention of this invention according to claim 15 tunes in a program to recording and playback equipment, The image and voice recording reproduction means which records video information or speech information, and the memory which memorizes the connection state and reservation of picture recording between the control code for every recording and playback equipment, and each recording and playback equipment, The recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording is given to an inside, and it has the operation of making it possible to control the recording and playback of the recording and playback equipment of other slave sides as a master side device.

[0029]A channel selection means by which the invention of this invention according to claim 16 tunes in a program for recording and a reproducing system, The image and voice recording reproduction means which records video information or speech information, and the memory which memorizes the connection state and reservation of picture recording between the control code for every recording and playback equipment, and each recording and playback equipment, Master-side recording and playback equipment which has in an inside a recording schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, The reception means which receives the control signal from master-side recording and playback equipment, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Have an identification code setting-out means to set up a self identification code, and the control signal from master-side recording and playback equipment is received according to an identification code, It constitutes from recording and playback equipment of the slave side which performs recording and playback in alignment with a recording schedule, master-side recording and playback equipment — a time check — while it has a means — the recording and playback equipment of a slave side — a time check — using recording and playback equipment without a means — the time check of master-side recording and playback equipment — by a means by performing schedule management of the recording and playback of each recording and playback equipment of all the slave sides. When it becomes picture recording times, it has the operation that it is possible to record by transmitting a control signal to the device of a slave side from a master side.

[0030]the invention of this invention according to claim 17 — recording and a regeneration control device — a time check — with the matrix switch which changes input and output of a means and two or more video voice signals. The schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, It has a control means which controls two or more recording and playback equipment, and a transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment, By [which construct the schedule of the recording and playback of two or more recording and playback equipment based on reservation of picture recording, and performs recording and reproduction control of each recording and playback equipment] both controlling a matrix switch, It has the operation of making it possible to carry out switchover control of the input and output of a video voice signal, without increasing the input/output terminal of each recording and playback equipment, and a display.

[0031]the invention of this invention according to claim 18 — recording and a reproducing system — a time check — with the matrix switch which changes input and output of a means and two or more video voice signals. The schedule management means which performs schedule organization of assignment to each recording and playback equipment of reservation of picture recording, The control means which controls two or more recording and playback equipment, and the transmitting means which transmits a control signal to each recording and playback equipment by the control code corresponding to each recording and playback equipment are provided, Based on reservation of picture recording, the schedule of the recording and playback of two or more recording and playback equipment is constructed, Recording and a regeneration control device which performs recording and reproduction control of each recording and playback equipment and which controls a matrix switch and both carries out switchover control of the input and output of a video voice signal, A channel selection means to tune in a program, and the image and voice recording reproduction means which record video information or speech information, Two or more recording and playback equipment provided with an identification code setting-out means to set up a self identification code, It has at least a display which has a display control part which controls a switch based on the control signal from the recording and the regeneration control device which won popularity in the receive section which receives the control signal from recording and a regeneration control device, and the receive section, and changes the input of an image and a sound, It has the operation that timed recording can be made by carrying out switchover control of the input and output of the video voice signal between two or more recording and playback equipment or two or more recording and playback equipment, and a display by the matrix switch of recording and a regeneration control device.

[0032]Hereafter, an embodiment of the invention is described using drawing 18 from drawing 1.

[0033](Embodiment 1) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 1 / a 1st embodiment of this invention] The block diagram showing the connecting relation of a display, the block diagram showing the detailed composition of recording and a regeneration control device, [in / in drawing 2 / a 1st embodiment of this invention] The block diagram and drawing 4 in which the detailed composition of recording and playback equipment is shown are a block diagram showing the detailed composition of the display in a 1st embodiment of this invention. [in / in drawing 3 / a 1st embodiment of this invention] In drawing 1, a distributor, and 102-104 the numerals 101 Recording and playback equipment, In a controlling signal line and drawing 2 the video voice signal line by which 105 pours recording and a regeneration control device, and, as for 106, a display, 110-113, and 118-120 pass a video voice signal, and 114-117, the numerals 105 — 204 setting a recording schedule management section and 203 to an operation input section, being set to an indicator, and recording and a regeneration control device, and 201 setting 211-213 to a signal wire and drawing 3, and a transmission section and 202, The numerals 301 recording and playback equipment, and 302 an identification code setting-out means and 303 A receive section, 304 — a tuner and 305 — an appliance control part and 306 — a time check — a means and 307 — an image and a voice recording regenerating section. 308 a switch and 309 a character generation part and 310 A video voice signal line, 315, 320, and 323 set 311-314, and 317-319 to a controlling signal line, set them on an audio signal line, and 316, 321, 322, and 324 are set to a video signal line and drawing 4, The numerals 106 a display and 401 an identification code setting-out means and 402 A receive section, As for 403, a character generation part and 406 a switch and 407 an image display, and 410, 414-417, 420 and 422 a voice output part and 405 for a display control part and 404 A controlling signal line, 411 to 413 image, and an audio signal line, 418 expresses 419 and an

audio signal line and 421 express a video signal line.

[0034]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 1 has shown the case where timed recording is made using three sets of recording and playback equipment. Operation of timed recording is first explained briefly using drawing 1.

[0035]The video signal 110 (generally, although it is a video signal, an audio signal, and the signal with which multiplex [of the data] was carried out, since it is easy here, it will be called a video signal) received with CATV or the antenna is distributed by the distributor 101, and is inputted into each recording and playback equipment via the signal wires 111-113. In recording and the regeneration control device 105, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 114-116. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 106 via the signal wire 117, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 118-120 can be chosen, and an image can be displayed and checked. These signal wires 114-117 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 102-104, the image and sound of the channel specified that the start time of the reserved program comes are recorded.

[0036]Here, operation of recording and a regeneration control device is explained in more detail using drawing 2. Operation of the recording and playback equipment at this time is explained using drawing 3. First, the identification code received from the identification code setting-out means 302 via the signal wire 422 when the control information 325 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 303 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 305 via the signal wire 312. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 302. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen. In the appliance control part 305, when an incoming message is a reservation-of-picture-recording demand, recording reservation data etc. are sent to the character generation part 309 via the signal wire 319. In the character generation part 309, the received text is changed into a video signal and it outputs to the video signal line 322.

[0037]Based on the control information received from recording and a regeneration control device, directions of a change of the switch 308 are taken out with the appliance control part 305 via the signal wire 318. This outputs that to which the video signal 321 outputted from the video signal 322, or the image and the voice recording regenerating section 307 outputted from the character generation part 309 and the audio signal 320 inner-correspond to the video signal line 324 and the audio signal line 323 with the switch 308. furthermore — passing the signal wire 313 in the appliance control part 305 — a time check — a recording start and finish time are set as the means 306. a time check — by the means 306, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to an appliance control part via the signal wire 313 that a difference is set to 0. If recording directions will be sent to an image and the voice recording regenerating section 307 via the signal wire 317 if the notice of video recording start time comes, and the notice of recording finish time comes by the appliance control part 305, directions of a stop will be sent to an image and the voice recording regenerating section 307 via the signal wire 317. In the case of recording, directions of setting out of the channel specified from the appliance control part 305 to the tuner 304 via the signal wire 314 are sent. Based on this, by the tuner 304, the image of the channel of inner specification of the video signal from the video signal line 310 is separated, and a video signal and an audio signal are outputted to the video signal line 316 and the audio signal line 315, respectively.

[0038]Operation of the display at this time is explained using drawing 4. In the display 106, the identification code for discernment of a device is beforehand set up by the identification code setting-out means 401 like recording and playback equipment. The identification code received

from the identification code setting-out means 401 via the signal wire 422 when the control information 410 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 402 is checked, If it judges that the received control information allots self, the contents will be passed to the display control part 414 via the signal wire 414. Based on the control information from recording and a regeneration control device, directions of a change are taken out with the display control part 414 to the switch 406 via the signal wire 415, This outputs that to which the video signal 421 from the character generation part 405 or the video voice signals 411-413 from each recording and playback equipment inner-correspond to the video signal line 419 and the audio signal line 418 with the switch 406. In the image display 407, the image of the video signal line 419 is displayed on a monitor, and a reproducing output is carried out [sound / of the audio signal line 418] in the voice output part 404.

[0039](Embodiment 2) The figure and drawing 6 in which the composition of recording and a regeneration control device is shown are a figure showing the composition of the recording and playback equipment in a 2nd embodiment of this invention. [in / in drawing 5 / a 2nd embodiment of this invention] The connecting relation of the recording and the regeneration control device in a 2nd embodiment of this invention, recording and playback equipment, and a display is the same as that of drawing 1 of a 1st embodiment of this invention, and is the same as that of drawing 4 of a 1st embodiment also about the composition of a display. About the composition of recording and a regeneration control device. If it removes that the transmission section 201 of drawing 2 is the transmission and reception section 501 in drawing 5, it is the same as that of a 1st embodiment, and about the composition of recording and playback equipment, if it removes that the receive section 303 of drawing 3 is the transmission and reception section 603 in drawing 6, it is the same as that of a 1st embodiment. Drawing 7 is a figure showing the exchange of the control information between the recording and the regeneration control device, and each recording and playback equipment in a 2nd embodiment of this invention. 501 of drawing 5 a transmission and reception section and 502 a recording schedule management section and 503 An operation input section, 504 an indicator, and 511-513 601 of a signal wire and drawing 6 Recording and playback equipment, 602 an identification code setting-out means and 603 a receive section and 604 A tuner, 605 — an appliance control part and 606 — a time check — a means and 607 — an image and a voice recording regenerating section. 608 — a switch and 609 — a character generation part and 6001, as for a media classification primary detecting element and 610, a video voice signal line, 611-614, and 617-619 and 631 express a controlling signal line, 615, 620, and 623 express an audio signal line, and 616, 621, 622, and 624 express a video signal line.

[0040]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 1 has shown the case where timed recording is made using three sets of recording and playback equipment. By this embodiment, except having a transmitting function, respectively, each recording and playback equipment 102-104, and recording and a regeneration control device 105 are the same as that of drawing 1, and are especially explained in detail here using drawing 5, drawing 6, and drawing 7 about the portion about an exchange of a bidirectional signal. In the recording and the regeneration control device of drawing 5, the data of the number of the recording and playback equipment to be used, etc. besides the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 504 from the operation input section 503, finish time, the image quality in the case of recording, etc. is inputted. The model of each recording and playback equipment, a function, performance, the existence of wearing of recording media, The recorded time of the time [of the recording media with which it is equipped / which can be recorded] or capacity, and recording media with which it is equipped, or capacity, The non-picture recording times of the recording media with which it is equipped or capacity, the kind of recording media with which it is equipped, Taking advantage of a two-way communication function, via the transmission and reception section 501, it asks each recording and playback equipment one by one, and acquires about the information for recording schedule organization of the connection state between recording reservation information including a recording channel and picture recording times, and recording and playback equipment, the connection state between recording and playback equipment, and a display, etc.

[0041]When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification

code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 502. The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. In the recording schedule management section 502, a picture recording program and recording mode are assigned for every device from the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, etc. The result assigned by the recording schedule management section 502 is checked by the display of the indicator 504, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 503, it will be notified to the recording schedule management section 502 via the signal wire 513. The recording reservation data for every recording and playback equipment determined in the recording schedule management section 502 is sent to the transmission and reception section 501 via the signal wire 511, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission and reception section 501. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0042] Operation of the recording and playback equipment at this time is explained using drawing 6. The identification code received from the identification code setting-out means 602 via the signal wire 622 when the control information 625 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the transmission and reception section 603 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 605 via the signal wire 612. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 602. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen. When an incoming message is an inquiry (device information-requirements message) of the information by the side of recording and playback equipment in the appliance control part 605, The information on the kind of tape with which it has equipped now which was received from the media classification primary detecting element 6001 via the signal wire 631, The transmission and reception section 603 is passed via the signal wire 612 by making into a device information notification message the information by the side of recording and playback equipment, such as a reservation-of-picture-recording situation currently held in the memory in the residue of the tape received from the image and the voice recording regenerating section 607 via the signal wire 617 which can be recorded, and the appliance control part 605. The transmission and reception section 603 sends this to the recording and regeneration control device side, and notifies it.

[0043] In the appliance control part 605, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 609 via the signal wire 619. In the character generation part 609, the received text is changed into a video signal and it outputs to the video signal line 622. Based on the control information from recording and a regeneration control device, directions of a change of the switch 608 are taken out with the appliance control part 605 via the signal wire 618. This outputs that to which the video signal 621 outputted from the video signal 622, or the image and the voice recording regenerating section 607 outputted from the character generation part 609 and the audio signal 620 inner-correspond to the video signal line 624 and the audio signal line 623 with the switch 608. furthermore — passing the signal wire 613 in the appliance control part 605 — a time check — a recording start and finish time are set as the means 606. a time check — by the means 606, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 605 via the signal wire 613 that a difference is set to 0. If recording directions will be sent to an image and the voice recording regenerating section 607 via the signal wire 617 if the notice of video recording start time is received, and the notice of recording finish time comes by the appliance control part 605, directions of a stop will be sent to an image and the voice recording regenerating section 607 via

the signal wire 617. In the case of recording, directions of setting out of the channel specified from the appliance control part 605 to the tuner 604 via the signal wire 614 are sent. Based on this, by the tuner 604, the image of the channel of inner specification of the video signal from the video signal line 610 is separated, and a video signal and an audio signal are outputted to the video signal line 616 and the audio signal line 615, respectively.

[0044] Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0045] Here, the message transmitted and received using drawing 7 between recording and a regeneration control device, and each recording and playback equipment is explained. Drawing 7 shows the example of the sent received message in case device identification code ID1 - ID3 are set up to recording and the playback equipment 1-3, respectively. In this case, recording and a regeneration control device ask information required for the scheduling of the reservation of picture recording of the program which transmits a device information-requirements message (the field in () is a device identification code) to each recording and playback equipment, and is assigned to each device, when new reservation of picture recording occurs. Each recording and playback equipment record and transmit [regeneration control device] a device information notification message (the fields in () are a device identification code and device information to order), and notifies the information by the side of recording and playback equipment, such as a kind of tape with which it has equipped now, a residue of a tape which can be recorded, and a reservation-of-picture-recording situation. The time and effort which a user inputs into recording and a regeneration control device by this can be saved. Based on these information, recording and a regeneration control device construct the schedule of reservation of picture recording, and transmits a reservation-of-picture-recording request message to each recording and playback equipment. Each field in () of a reservation-of-picture-recording request message expresses a device identification code, a channel, recording start time, recording end time, and recording mode, respectively. That is, by the reservation-of-picture-recording demand (ID1, TV1, TS1, TS2, N) message from recording and a regeneration control device, it is being required that one TV of terrestrial broadcasting should be recorded by recording mode: Normal (N) to recording and the playback equipment 1 from time TS of opening day 1 to time Te of end date 1. On the other hand, the notification message which checks having received reservation of picture recording from recording and the playback equipment 1 is returned. A reservation-of-picture-recording request message is transmitted to recording and the playback equipment 2 and 3 like the following, and the reservation-of-picture-recording reception message which checks having received reservation of picture recording from each device is returned. A check is performed by returning a reservation-of-picture-recording change reception message to a reservation-of-picture-recording change-request message similarly to change a request to print out files on the way. Thus, by incorporating a bidirectional communication function between recording and a regeneration control device, and recording and playback equipment, For example, the case where recording and playback equipment break down and a reservation-of-picture-recording reception message does not come on the contrary, In the notice of a recording end not coming on the contrary, even if recording end time passes etc., re-scheduling processing of changing hurriedly the reservation of picture recording which was being assigned to the device to another recording and playback equipment is performed, and failure to recording can be avoided.

[0046] (Embodiment 3) The figure showing the composition of recording and playback equipment, [in / in drawing 8 / a 3rd embodiment of this invention] The figure and drawing 11 in which the connecting relation of recording and a regeneration control device, recording and playback equipment, and a display is shown are a figure for explaining the schedule of the recording and playback in a 3rd embodiment of this invention. [in / in drawing 9 / a 3rd embodiment of this invention] It is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 2 in a 1st embodiment of this invention about the internal configuration of the recording and the regeneration control device 805 in drawing 9. About the internal configuration of the display 806 in drawing 9, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention. 801 of drawing 9 a distributor, and 802-804 recording and playback equipment, and 805 Recording and a regeneration control device, The video voice signal line by which a display, 810-813, and 817-825 pass a video voice signal 806, 701 of a controlling signal line and drawing 8 814-817, and 826 Recording and playback equipment, 702 an identification code setting-out means and 703 a receive section and 704 A tuner, 705 — an appliance control part and 706 — a time check — a means and 707 — an image and a voice recording regenerating section. 708 — a switch and 709,

a video voice signal line, 711-714, and 717-719 and 732 express a controlling signal line, 715, 720, and 723 express an audio signal line, and, as for a character generation part, 710, and 726-730, 716, 721, 722, and 724 express a video signal line.

[0047]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. At drawing 9, each recording and playback equipment 802-804, and the display 806 shall have only a receiving function by this embodiment with the figure showing the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 9. The video signal 810 received with CATV or the antenna is distributed by the distributor 801, and is inputted into each recording and playback equipment via the signal wires 811-813. In recording and the regeneration control device 805, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 814-816. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 806 via the signal wire 826, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 819, 822, and 825 can be chosen, and an image can be displayed and checked. These signal wires 819, 822, and 825 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 802-804, the recording of the image and sound of the channel specified that the start time of the reserved program comes is started.

[0048]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the programs (serial drama etc.) eventually broadcast in the same series using this function. It records with the recording and playback equipment which has recording and the regeneration control device 805 temporarily, a schedule is constructed so that it may copy again to the target recording and playback equipment at vacant time, input and output of the image and sound of each recording and playback equipment are controlled, and it carries out to edit automatically.

[0049]Here, it explains in more detail about operation of recording and a regeneration control device. Since it is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 2 about the internal configuration of the recording and the regeneration control device 805 in drawing 9, it explains using drawing 2. The operation input section 203 in the recording and the regeneration control device of drawing 2 Power turn OFF, The button for control of recording and playback equipment, such as recording, playback, and a stop, the change of a monitor display, The ten key for specifying the button, the program, and reservation-of-picture-recording time for specification of recording and playback equipment, etc. are comprised, According to the display of the indicator 204, the model of each recording and playback equipment, a function, performance, Time which can be recorded or capacity of the existence of wearing of recording media, and the recording media with which it is equipped, Non-picture recording times or capacity of the recorded time of the recording media with which it is equipped or capacity, and the recording media with which it is equipped, The information for recording schedule organization of the connection state between recording reservation information including the kind, the recording channel, and picture recording times of the recording media with which it is equipped, and recording and playback equipment, the connection state between recording and playback equipment, and a display, the image quality in the case of recording, etc. is inputted. When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 202.

[0050]The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. It specifies by the operation input section beforehand also about the connection state between each recording and playback equipment. In the recording schedule management section 202, a picture recording program and recording mode are assigned for every

device from the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, etc. The result assigned by the recording schedule management section 202 is checked by the display of the indicator 204, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 203, it will be notified to the recording schedule management section 202 via the signal wire 213, The recording reservation data for every recording and playback equipment determined in the recording schedule management section 202 is sent to the transmission section 201 via the signal wire 211, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission section 201. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0051] Operation of the recording and playback equipment at this time is explained using drawing 8. The identification code received from the identification code setting-out means 702 via the signal wire 722 when the control information 725 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the receive section 703 is checked, If it judges that the received control information allots self, the contents will be passed to the appliance control part 705 via the signal wire 712. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 702. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen.

[0052] In the appliance control part 705, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 709 via the signal wire 719. In the character generation part 709, the received text is changed into a video signal and it outputs to the video signal line 722.

[0053] Based on the control information and the recording schedule from recording and a regeneration control device, directions of a change of the switch 708 are taken out with the appliance control part 705 via the signal wire 718, This outputs that to which the video signal 724 outputted from the video signal 722, or the image and the voice recording regenerating section 707 outputted from the character generation part 709 and the audio signal 723 inner-correspond with the switch 708 to the video voice signal line by which the video voice signal lines 728-730 correspond either.

[0054] furthermore — passing the signal wire 713 in the appliance control part 705 — a time check — it starts [recording start, finish time, or reproduction] for the means 706, and finish time is set as it. a time check — by the means 706, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 705 via the signal wire 713 that a difference is set to 0. If the notice of video recording start time is received, will take out directions of a change on the switch 700 with the appliance control part 705 via the signal wire 732, and with the switch 700 with directions of this change. Based on a recording schedule, any 1 set in the video signal 716 and the audio signal 715 from the tuner 704, or the video voice signals 726 and 727 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 721 and the audio signal line 720. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 707 via the signal wire 717 in the appliance control part 705 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 707 via the signal wire 717. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 707 via the signal wire 717, respectively. In an image and the voice recording regenerating section 707, if recording directions are received, the recording of the image and sound of the video signal line 721 and the audio signal line 720 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 707, when reproductive directions are received from the appliance control part 705 via the signal wire 717, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback

equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0055]In the case of the program recording from the tuner 704, the object of recording sends directions of setting out of the channel specified to the tuner 704 via the signal wire 714 in the appliance control part 705, Based on this, by the tuner 704, the image of the channel of inner specification of the video signal from the video signal line 710 is separated, and a video signal and an audio signal are outputted to the video signal line 716 and the audio signal line 715, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0056]Here, the example of the method of the scheduling of the reservation of picture recording which uses three sets of recording and playback equipment using drawing 11 is explained. The relation between the channel which is broadcasting the program and it which carry out reservation of picture recording, and a broadcasting-hours belt is shown in the upper part of drawing 11. It is the programs (serial drama etc.) of the same series which has waved [of (1) - (7)] to the program which carries out reservation of picture recording for convenience, and performed the same hatching. (5) is expressed in this example as (1) - (3) and (4). Recording and the playback equipment 1-3 shall be equipped with the tape of the same capacity. When the program which carries out reservation of picture recording has such a relation, in the recording schedule management section 502, the reservation of picture recording of the program of (1) is first assigned to recording and the playback equipment 1, and reservation of picture recording is assigned to three sets of recording and the playback equipment 1-3, respectively for (4) in the same time zone as the next, (6), and (7). Next, the recording of (4) and (7) is completed, the program of (7) recorded on recording and the playback equipment 1 until the recording of (2) started after that is played, and a request to print out files of playback and recording is assigned to each device so that this may be copied to recording and the playback equipment 3. Furthermore, the reservation of picture recording of (2) or (3) program is assigned to recording and the playback equipment 1, and the reservation of picture recording of the program of (5) is assigned to recording and the playback equipment 2, respectively. The program of series can be recorded on the same tape by this, and also it becomes possible to make the most of the picture recording times of a tape.

[0057](Embodiment 4) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 1 / a 4th embodiment of this invention] The figure showing the connecting relation of a display, the figure showing the composition of recording and a regeneration control device, the figure showing the composition of recording and playback equipment, and drawing 4 are the figures showing the composition of the display in a 4th embodiment of this invention. [in / in drawing 2 / a 4th embodiment of this invention] [in / in drawing 3 / a 4th embodiment of this invention] The connecting relation of the recording and the regeneration control device in a 4th embodiment, recording and playback equipment, and a display, and the composition of recording and a regeneration control device, The composition of recording and playback equipment and the composition of a display are the same as that of it in a 1st embodiment of this invention, and are [display / recording and playback equipment, and] the same as that of a 1st embodiment also about the operation.

[0058]By a 4th embodiment of this invention, although it is fundamentally the same in a 1st embodiment of this invention, the composition of recording and a regeneration control device, and operation, since there is a difference in the following points, the difference is explained. In the recording and the regeneration control device of drawing 2, the operation input section 203 comprises the ten key for specifying the button, the program, and reservation-of-picture-recording time for specification of the button for control of recording and playback equipment, such as power turn OFF, recording, playback, and a stop, the change of a monitor display, and recording and playback equipment, etc. Are what is seen or he would like to see the image in almost all cases when playing the image of recording and playback equipment with a user here a time of needing, and this, The procedure that specified a certain recording and playback equipment, and playback was directed and of specifying and displaying the video signal line from its recording and playback equipment to a display as next operation will be stepped on, and it is dramatically complicated. This can say the same thing, not only the case of playback but even when checking the reservation of picture recording of specific recording and playback equipment.

[0059]So, in this embodiment, the connecting relation of each recording and playback equipment, and a display is beforehand inputted from the operation input section 203, When specifying a

certain recording and playback equipment from the operation input section 203 and directing playback, by the recording schedule management section 202. While judging the video voice signal line which should be changed from the connection state with the display 100, transmitting a control signal via the transmission section 201 to its recording and playback equipment and directing playback, Also to the display 100, a control signal is transmitted via the transmission section 201, and it directs to choose and display the video signal line from its recording and playback equipment. The same may be said of the time of checking the reservation of picture recording of specific recording and playback equipment.

[0060](Embodiment 5) Recording and a regeneration control device, and recording and playback equipment, [in / in drawing 9 / a 5th embodiment of this invention] The figure showing the connecting relation of a display, the figure showing the composition of recording and playback equipment, and drawing 11 are the figures for explaining the schedule of the recording and playback in a 5th embodiment of this invention. [in / in drawing 10 / a 5th embodiment of this invention] It is the same as that of the figure showing the composition of the recording and the regeneration control device of drawing 5 in a 2nd embodiment of this invention about the internal configuration of the recording and the regeneration control device 805 in drawing 9, About the internal configuration of the display 806 in drawing 9, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention. 801 of drawing 9 a distributor, and 802-804 recording and playback equipment, and 805 Recording and a regeneration control device, The video voice signal line by which a display, 810-813, and 817-825 pass a video voice signal 806, 901 of a controlling signal line and drawing 10 814-817, and 826 Recording and playback equipment, 902 an identification code setting-out means and 903 a transmission and reception section and 904 A tuner, 905 — an appliance control part and 906 — a time check — a means and 907 — an image and a voice recording regenerating section. 908 a switch and 909 a character generation part and 9001 A media classification primary detecting element, A video voice signal line, 911-914, and 917-919, 931 and 932 express a controlling signal line, 915, 920, and 923 express an audio signal line, and 910, and 926-930 express a video signal line 916, 921, 922, and 924.

[0061]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. At drawing 9, each recording and playback equipment 802-804, and recording and a regeneration control device 805 have a transmitting function by this embodiment, respectively with the figure showing the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 9. The video signal 810 received with CATV or the antenna is distributed by the distributor 801, and is inputted into each recording and playback equipment via the signal wires 811-813. In recording and the regeneration control device 805, an input of the information about other each recording and playback equipment of information required for reservation of picture recording will adjust the schedule of the reservation of picture recording of each recording and playback equipment automatically. After checking a schedule control result, recording reservation data is transmitted to each recording and playback equipment via the signal wires 814-816. The video signal from the recording and playback equipment which sends directions of the switchover control of the display to the display 806 via the signal wire 826, and corresponds the reservation-of-picture-recording situation at this time out of the video signals 819, 822, and 825 can be chosen, and an image can be displayed and checked. These signal wires 819, 822, and 825 are virtual, and may use the radio by infrared light etc. actually. In recording and the playback equipment 802-804, the image and sound of the channel specified that the start time of the reserved program comes are recorded.

[0062]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It records with the recording and playback equipment which has recording and the regeneration control device 805 temporarily, a schedule is constructed so that it may copy again to the target recording and playback equipment at vacant time, input and output of the image and sound of each recording and playback equipment are controlled, and it carries out to edit automatically.

[0063]Here, it explains in more detail about operation of recording and a regeneration control device. Since it is the same as that of the figure showing the composition of the recording and

the regeneration control device of drawing 5 about the internal configuration of the recording and the regeneration control device 805 in drawing 9, it explains using drawing 5.

[0064]In the recording and the regeneration control device of drawing 5, the data of the number of the recording and playback equipment to be used, etc. besides the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 504 from the operation input section 503, finish time, the image quality in the case of recording, etc. is inputted. Taking advantage of a two-way communication function, via the transmission and reception section 501, it asks each recording and playback equipment one by one, and acquires about the data of the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. When setting up an identification code by the identification code setting-out means of the device of a transmission destination, the identification code corresponding to the identification code set up for every device is set up. These inputted data is memorized by the memory and used for scheduling in the recording schedule management section 502. The control code of each recording and playback equipment is beforehand registered into the memory, and the control code of a beforehand corresponding device is specified as it by an operation input section again. It specifies by the operation input section beforehand also about the connection state between each recording and playback equipment.

[0065]In the recording schedule management section 502, a picture recording program and recording mode are assigned for every device from the connection state between the length of the reserved program, a time zone, the image quality of recording, the kind of tape of each recording and playback equipment, the residue that can be recorded, and each recording and playback equipment, etc. The result assigned by the recording schedule management section 502 is checked by the display of the indicator 504, or the display of a display, and necessary information will be corrected if correction is required. If the check of the contents of reservation of picture recording is received by the operation input section 503, it will be notified to the recording schedule management section 502 via the signal wire 513. The recording reservation data for every recording and playback equipment determined in the recording schedule management section 502 is sent to the transmission and reception section 501 via the signal wire 511, and the control code for every recording and playback equipment is transmitted to recording and playback equipment in the transmission and reception section 501. In order to avoid the erroneous reception of the code between the same models, when the identification code of the device is set up, the identification code is attached and it is transmitted.

[0066]Operation of the recording and playback equipment at this time is explained using drawing 10. The identification code received from the identification code setting-out means 902 via the signal wire 922 when the control information 925 about the reservation of picture recording and appliance control which have been sent from recording and a regeneration control device was received in the transmission and reception section 903 is checked. If it judges that the received control information allots self, the contents will be passed to the appliance control part 905 via the signal wire 912. Here, when recording and playback equipment are plurality, in order to send control information only to a specific device, the code for [with other devices] identifying is beforehand set up by the identification code setting-out means 902. In this case, setting out also with the same recording and regeneration control device side is performed. Setting out of an identification code is performed by selection from a DIP switch or a menu screen.

[0067]When an incoming message is an inquiry (device information-requirements message) of the information by the side of recording and playback equipment in the appliance control part 905, The information on the kind of tape with which it has equipped now which was received from the media classification primary detecting element 9001 via the signal wire 931, The transmission and reception section 903 is passed via the signal wire 912 by making into a device information notification message the information by the side of recording and playback equipment, such as a reservation-of-picture-recording situation currently held in the memory in the residue of the tape received from the image and the voice recording regenerating section 907 via the signal wire 917 which can be recorded, and the appliance control part 905. The transmission and reception section 903 sends this to the recording and regeneration control device side, and notifies it. In the appliance control part 905, when an incoming message is a reservation-of-picture-recording demand, while holding recording reservation data etc. to an internal memory, it sends to the character generation part 909 via the signal wire 919. In the character generation part 909, the received text is changed into a video signal and it outputs to the video signal line 922.

[0068]Based on the control information and the recording schedule from recording and a regeneration control device, directions of a change of the switch 908 are taken out with the appliance control part 905 via the signal wire 918, This outputs that to which the video signal 924 outputted from the video signal 922, or the image and the voice recording regenerating section 907 outputted from the character generation part 909 and the audio signal 923 inner-correspond with the switch 908 to the video voice signal line by which the video voice signal lines 928-930 correspond either.

[0069]furthermore — passing the signal wire 913 in the appliance control part 905 — a time check — it starts [recording start, finish time, or reproduction] for the means 906, and finish time is set as it. a time check — by the means 906, time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time, and it is notified to the appliance control part 905 via the signal wire 913 that a difference is set to 0. If the notice of video recording start time is received, will take out directions of a change on the switch 900 with the appliance control part 905 via the signal wire 932, and with the switch 900 with directions of this change. Based on a recording schedule, any 1 set in the video signal 916 and the audio signal 915 from the tuner 904, or the video voice signals 926 and 927 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 921 and the audio signal line 920.

[0070]If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 907 via the signal wire 917 in the appliance control part 905 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 907 via the signal wire 917. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 907 via the signal wire 917, respectively. In an image and the voice recording regenerating section 907, if recording directions are received, the recording of the image and sound of the video signal line 921 and the audio signal line 920 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 907, when reproductive directions are received from the appliance control part 905 via the signal wire 917, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0071]In the case of the program recording from the tuner 904, the object of recording sends directions of setting out of the channel specified to the tuner 904 via the signal wire 914 in the appliance control part 905, Based on this, by the tuner 904, the image of the channel of inner specification of the video signal from the video signal line 910 is separated, and a video signal and an audio signal are outputted to the video signal line 916 and the audio signal line 915, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0072]By performing schedule control same with having explained using drawing 11 in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0073](Embodiment 6) A remote controller [in / in drawing 12 / a 6th embodiment of this invention], The figure showing the connecting relation of master side recording and playback equipment, slave side recording and playback equipment, and a display, The figure showing the composition of a remote controller [in / in drawing 13 / a 6th embodiment of this invention], the figure showing the composition of master side recording and playback equipment, and drawing 15 are the figures showing the composition of the slave side recording and playback equipment in a 6th embodiment of this invention. [in / in drawing 14 / a 6th embodiment of this invention] About the internal configuration of the display 1106 in drawing 12, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention.

[0074]In drawing 12, a distributor, and 1102-1104 the numerals 1101 Recording and playback equipment, In a controlling signal line and drawing 13 the video voice signal line by which 1105 pours a remote controller and, as for 1106, a display, 1110-1113, and 1116-1124 pass a video voice signal, and 1114 and 1115, the numerals 1201 — 1215 setting an operation input section

and 1204 to an indicator, being set to a remote controller, and a transmission section and 1202 setting 1211-1213 to a signal wire and drawing 14, and a control section and 1203, Master side recording and playback equipment, and 1302 the numerals 1301 An identification code setting-out means, 1303 a receive section and 1304 a tuner and 1305 Recording schedule management and an appliance control part, 1306 — a time check — an image and a voice recording regenerating section, and 1308 a means and 1307, [and] 1309 a character generation part and 1300 a switch and 13001 A media classification primary detecting element, A transmission and reception section, and 1310, 1328-1330, 1333 and 1334 13002 A video voice signal line, 1315, 1320, and 1323 set 1311-1314, and 1317-1319, 1326, 1327, 1331 and 1332 to a controlling signal line, set them on an audio signal line, and 1316, 1321, 1322, and 1324 are set to a video signal line and drawing 15, The numerals 1401 slave side recording and playback equipment, and 1404 a tuner and 1405 An appliance control part, An image and a voice recording regenerating section switch 1407, and a switch and 1300 switch 1408, A media classification primary detecting element, and 1410, 1426-1430 14001 A video voice signal line, 1411-1412, 1414, and 1417-1418, 1431-1434 express a controlling signal line, 1415, 1420, and 1423 express an audio signal line, and 1416, 1421, and 1424 express a video signal line.

[0075]The operation is explained below about the recording and the regeneration control device, the recording and playback equipment, and the display which were constituted as mentioned above. Drawing 12 has shown the composition in the case of making timed recording by cooperating mutually using three sets of recording and playback equipment. The operation is first explained briefly using drawing 12.

[0076]The video signal 1110 received with CATV or the antenna is distributed by the distributor 1101, and is inputted into each recording and playback equipment via the signal wires 1111-1113. In the remote controller 1105, the information about other each recording and playback equipment of information required for reservation of picture recording is inputted. From the remote controller 1105, recording reservation data and control information are transmitted to master side recording and the playback equipment 1102 via the signal wire 1114 in the settled unit. This signal wire 1114 is virtual and may use the radio by infrared light etc. actually. In master side recording and the playback equipment 1102, a recording schedule is constructed from the reserved information etc. which were received from the remote controller 1105. While outputting the contents of reservation of picture recording at this time to the video signal line 1118, directions of the switchover control of the display to the display 1106 are sent via the signal wire 1115, and a schedule control result is displayed as an image. If the displayed schedule control result is satisfactory, confirmative advice will be transmitted to master side recording and the playback equipment 1102 from the remote controller 1105. receiving this result in master side recording and the playback equipment 1102 — an internal time check — if schedule management is performed using a means and the appointed time comes, directions of a recording start and an end, and a playback start and an end will be performed to self, and recording and playback equipment 1102-1104 via the signal wire 1115. In recording and the playback equipment 1102-1104, recording of the specified image and sound and playback are performed based on these directions.

[0077]Since the image and voice response of each recording and playback equipment are connected by the input terminal of two sets of other recording and playback equipment as shown in a figure, it is possible to make the copy of an image and a sound between two sets of arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It is also possible to record with the recording and playback equipment which has temporarily master side recording and the playback equipment 1102, to construct a schedule so that it may copy again to the target recording and playback equipment at vacant time, to control input and output of the image and sound of each recording and playback equipment, and to carry out to edit automatically.

[0078]Operation of the remote controller 1105 is first explained in more detail here using drawing 13. In the remote controller 1105 of drawing 13, the data of a channel and start time required for the reservation of picture recording of a program to carry out reservation of picture recording according to the display of the indicator 1204 from the operation input section 1203, finish time, the image quality in the case of recording, etc. is inputted. It specifies from the operation input section 1203 also about the number of the recording and playback equipment used beforehand, or the connection state between devices. These inputted data is suitably sent to a transmission section via the signal wire 1211 as a message for control of master side recording and playback equipment by the control section 1202, and is sent to master side recording and playback

equipment from the transmission section 1201. The recording schedule created with master side recording and playback equipment based on this is checked by the display of a display, if correction is required, necessary information will be corrected from the operation input section 1203, and a check will be inputted if good. It is notified to the control section 1202 by the operation input section 503 that the check of the contents of reservation of picture recording is received via the signal wire 1213. In response in the control section 1202, it sends to a transmission section via the signal wire 1211 as a message for control of master side recording and playback equipment, and transmits to master side recording and playback equipment in the transmission and reception section 1201.

[0079]Operation of the master side recording and the playback equipment 1102 at this time is explained using drawing 14. By drawing 14, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 13001. In an image and the voice recording regenerating section 1307, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In recording schedule management and the appliance control part 1305. While acquiring these information via the signal wire 1331 and the signal wire 1317, About information, including the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. Based on the communications protocol defined beforehand, it asks each recording and playback equipment one by one via the transmission and reception section 13002 and the signal wire 1327, information is acquired, and they are recorded on an internal memory.

[0080]In recording schedule management and the appliance control part 1305. Information, including the channel of a program to carry out reservation of picture recording besides the number of the recording and playback equipment to be used which received from the remote controller, or the connection state between devices, start time, finish time, the image quality in the case of recording, etc., is acquired via the signal wire 1312 in the receive section 1303. The length of the program reserved whenever it received new reservation of picture recording, a time zone, The image quality of recording, the existence of wearing of the tape of each recording and playback equipment, the kind of tape, From the connection state between the residue (information received from the value or remote controller computed from the present tape position) which can be recorded, and each recording and playback equipment, etc., a picture recording program and recording mode are assigned for every device, the result is used as a character code, and it outputs to the signal wire 1319. In the character generation part 1309, it changes into the video signal of a display screen from this character code, and outputs to the video signal line 1322. In recording schedule management and the appliance control part 1305. A change is directed via the signal wire 1318 to the switch 1308 simultaneously with this, and the video output 1322 from the character generation part 1309 is outputted to the video signal line with which it is connected to the display in the switch 1308 based on directions of this change. If the check of a recording schedule is received from the receive section 1303 via the signal wire 1312, in recording schedule management and the appliance control part 1305, the contents of reservation of picture recording for every determined recording and playback equipment will be held to an internal memory.

[0081]In recording schedule management and the appliance control part 1305. Thus, based on the control information and the recording schedule from a remote controller, directions of a change of the switch 1308 are issued via the signal wire 1318, By this. That to which the video signal 1324 outputted from the video signal 1322, or the image and the voice recording regenerating section 1307 outputted from the character generation part 1309 with the switch 1308 and the audio signal 1323 inner-correspond on the video voice signal line by which the video voice signal lines 1328-1330 correspond either. It outputs.

[0082]furthermore — passing the signal wire 1313 in recording schedule management and the appliance control part 1305 — a time check — it starts [recording start / for every recording and playback equipment /, finish time, or playback] for the means 1306, and finish time is set as it. a time check — by the means 1306, if time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time and a difference is set to 0, it will notify to recording schedule management and the appliance control part 1305 via the signal wire 1313.

[0083]In recording schedule management and the appliance control part 1305. a time check — the thing to master side recording and playback equipment, or the thing to slave side recording and playback equipment, if the notice from the means 1306 is received, [judge and] When it is a

thing to slave side recording and playback equipment, directions of a recording start and an end, a playback start and an end, display control, etc. are sent to each recording and playback equipment via the transmission and reception section 13002 and the signal wire 1327. When it is a thing to master side recording and playback equipment and the notice of video recording start time is received, issue directions of a change on the switch 1300 via the signal wire 1332, and with the switch 1300 with directions of this change. Based on a recording schedule, any 1 set in the video signal 1316 from the tuner 1304, the audio signal 1315, and the video voice signals 1333 and 1334 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 1321 and the audio signal line 1320.

[0084]If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1307 via the signal wire 1317 in recording schedule management and the appliance control part 1305 and the notice of recording finish time comes, directions of a stop will be sent to an image and the voice recording regenerating section 1307 via the signal wire 1317. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1307 via the signal wire 1317, respectively. In an image and the voice recording regenerating section 1307, if recording directions are received, the recording of the image and sound of the video signal line 1321 and the audio signal line 1320 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1307, when reproductive directions are received from recording schedule management and the appliance control part 1305 via the signal wire 1317, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code.

[0085]Directions delivery of setting out of the channel which the object of recording specified to the tuner 1304 via the signal wire 1314 in recording schedule management and the appliance control part 1305 in the case of the program recording from the tuner 1304. Based on this, by the tuner 1304, the image of the channel of inner specification of the video signal from the video signal line 1310 is separated, and a video signal and an audio signal are outputted to the video signal line 1316 and the audio signal line 1315, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0086]Next, operation of slave side recording and playback equipment is explained using drawing 15. By drawing 15, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 14001. In an image and the voice recording regenerating section 1407, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In the appliance control part 1405, while acquiring these information via the signal wire 1431 and the signal wire 1417, These information is provided based on the communications protocol beforehand set that there is an inquiry from master side recording and playback equipment via the signal wire 1434, the transmission and reception section 14002, and the signal wire 1433.

[0087]Based on directions of the display control from master side recording and playback equipment, directions of a change of the switch 1408 are taken out with the appliance control part 1405 via the signal wire 1418, This outputs the video signal 1424 and the audio signal 1423 which are outputted from an image and the voice recording regenerating section 1407 with the switch 1408 to the video voice signal line by which the video voice signal lines 1428-1430 correspond either. If directions of a recording start are received from master side recording and playback equipment, will take out directions of a change on the switch 1400 with the appliance control part 1405 via the signal wire 1432, and with the switch 1400 with directions of this change. Any 1 set in the video signal 1416 from the tuner 1404, the audio signal 1415, and the video voice signals 1426 and 1427 from two sets of other recording and playback equipment is chosen, and it outputs to the video signal line 1421 and the audio signal line 1420. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1407 via the signal wire 1417 in the appliance control part 1405 and directions of a recording end come from master side recording and playback equipment, directions of a stop will be sent to an image and the voice recording regenerating section 1407 via the signal wire 1417. When a reproduction start notice and a reproduction terminating notice are received,

reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1407 via the signal wire 1417, respectively.

[0088]In an image and the voice recording regenerating section 1407, if recording directions are received, the recording of the image and sound of the video signal line 1421 and the audio signal line 1420 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1407, when reproductive directions are received from the appliance control part 1405 via the signal wire 1417, the head is pulled out by rewinding or sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When directions of the program recording from [from master side recording and playback equipment] a tuner come, Directions delivery of setting out of the channel specified to the tuner 1404 via the signal wire 1414 in the appliance control part 1405, Based on this, by the tuner 1404, the image of the channel of inner specification of the video signal from the video signal line 1410 is separated, and a video signal and an audio signal are outputted to the video signal line 1416 and the audio signal line 1415, respectively. Since it is the same as that of explanation of the embodiment of the invention 1 about operation of the display at this time, explanation is omitted.

[0089]By performing schedule control same with having explained using drawing 11 in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0090](Embodiment 7) A remote controller [in / in drawing 16 / a 7th embodiment of this invention], The figure showing the connecting relation of recording and a regeneration control device, recording and playback equipment, and a display, the figure showing the composition of recording and a regeneration control device, and drawing 18 are the figures showing the composition of the recording and playback equipment in a 7th embodiment of this invention. [in / in drawing 17 / a 7th embodiment of this invention] About the internal configuration of the recording and the playback equipment 1502-1505 in drawing 16. It is the same as that of the figure showing the composition of the recording and playback equipment of the slave side of drawing 15 in a 6th embodiment of this invention, and is the same as that of the figure showing the composition of the remote controller of drawing 13 in a 6th embodiment of this invention about the internal configuration of the remote controller 1506 in drawing 16. About the composition of display 1508 inside in drawing 16, it is the same as that of the figure showing the composition of the display of drawing 4 in a 1st embodiment of this invention.

[0091]In drawing 16, a distributor, and 1502-1504 the numerals 1501 Recording and playback equipment, The video voice signal line by which 1506 pours a remote controller, 1507 pours recording and a regeneration control device, and, as for 1508, a display, 1510-1514, and 1517-1125 pass a video voice signal, and 1515 and 1516 express a controlling signal line. In drawing 17, recording and a regeneration control device, and 16002 the numerals 1601 A transmission and reception section, A receive section and 1605 1603 Recording schedule management and an appliance control part, 1606 — a time check — a means and 1608 — a switch and 1609 — a character generation part. 1612-1614, and 1618, 1619, 1626 and 1627 express a signal wire, a video signal line, 1624, 1632-1635, and 1636-1639 express a video voice signal line 1622, and 1625 expresses a controlling signal line. In drawing 18, recording and playback equipment, and 1700 switch the numerals 1701, 17001 a media classification primary detecting element and 17002 a transmission and reception section and 1704 A tuner, 1705 an appliance control part and 1707 an image and a voice recording regenerating section, and 1710 and 1726 A video voice signal line, 1714, 1717, 1731, 1732, 1733, and 1734 express a signal wire, 1715, 1720, and 1723 express an audio signal line, and 1716, 1721, and 1724 express a video signal line.

[0092]The operation is explained below about the remote controller constituted as mentioned above, recording and a regeneration control device, recording and playback equipment, and a display. Drawing 16 has shown the composition in the case of making timed recording by cooperating mutually, using four sets of recording and the playback equipment 1502-1505 recording and regeneration control device 1507. The operation is first explained briefly using drawing 16.

[0093]The video signal 1510 received with CATV or the antenna is distributed by the distributor 1501, and is inputted into each recording and playback equipment via the signal wires 1511-1514. In the remote controller 1506, the information about other each recording and playback equipment of information required for reservation of picture recording is inputted. From the

remote controller 1506, recording reservation data and control information are transmitted to recording and the regeneration control device 1507 via the signal wire 1516 in the settled unit. This signal wire 1516 is virtual and may use the radio by infrared light etc. actually. In recording and the regeneration control device 1507, a recording schedule is constructed from the reserved information etc. which were received from the remote controller 1506. While outputting the contents of reservation of picture recording at this time to the video signal line 1525, directions of the switchover control of the display to the display 1508 are sent via the signal wire 1515, and a schedule control result is displayed as an image. If the displayed schedule control result is satisfactory, confirmative advice will be transmitted to recording and the regeneration control device 1507 from the remote controller 1506. receiving this result in recording and the regeneration control device 1507 — an internal time check — if schedule management is performed using a means and the appointed time comes, directions of a recording start and an end, and a playback start and an end will be performed to self, and recording and playback equipment 1502–1505 via the signal wire 1515. In recording and the playback equipment 1502–1505, recording of the specified image and sound and playback are performed based on these directions.

[0094] Since input and output of the image and the sound of each recording and playback equipment are connected by recording and the regeneration control device 1507 as shown in a figure, and connection of an input and an output can be arbitrarily changed with recording and the regeneration control device 1507, it is possible to make the copy of an image and a sound between arbitrary recording and playback equipment. By the case where he would like to record on the same tape, the program eventually broadcast in the same series using this function. It is also possible to record with the recording and playback equipment which exists temporarily with recording and the regeneration control device 1507, to construct a schedule so that it may copy again to the target recording and playback equipment at vacant time, and to carry out to edit automatically.

[0095] Here, operation of recording and the regeneration control device 1507 is first explained in more detail using drawing 17. By drawing 17, in recording schedule management and the appliance control part 1605. About information, including the kind of tape with which each recording and playback equipment have equipped, the residue of a tape which can be recorded, etc. Based on the communications protocol defined beforehand, it asks each recording and playback equipment one by one via the transmission and reception section 16002 and the signal wire 1627, information is acquired, and they are recorded on an internal memory.

[0096] In recording schedule management and the appliance control part 1605. Information, including the channel of a program to carry out reservation of picture recording besides the number of the recording and playback equipment to be used which received from the remote controller, or a connection state with recording and a regeneration control device, start time, finish time, the image quality in the case of recording, etc., is acquired via the signal wire 1612 in the receive section 1603. The length of the program reserved whenever it received new reservation of picture recording, a time zone, The image quality of recording, the existence of wearing of the tape of each recording and playback equipment, the kind of tape, From the residue (information received from the value or remote controller computed from the present tape position) etc. which can be recorded, a picture recording program and recording mode are assigned for every device, the result is used as a character code, and it outputs to the signal wire 1619. In the character generation part 1609, it changes into the video signal of a display screen from this character code, and outputs to the video signal line 1622. In recording schedule management and the appliance control part 1605. A change is directed via the signal wire 1618 to the switch 1608 simultaneously with this, and the video output 1622 from the character generation part 1609 is outputted to the video signal line 1624 with which it is connected to the display in the switch 1608 based on directions of this change. If the check of a recording schedule is received from the receive section 1603 via the signal wire 1612, in recording schedule management and the appliance control part 1605, the contents of reservation of picture recording for every determined recording and playback equipment will be held to an internal memory.

[0097] In recording schedule management and the appliance control part 1605. Thus, based on the control information and the recording schedule from a remote controller, directions of a change of the switch 1608 are issued via the signal wire 1618, This outputs that to which the video signal 1622 outputted from the character generation part 1609 or the video voice signal 1624, and the audio signals 1632–1635 inner-correspond with the switch 1608 to the video voice

signal line by which the video voice signal lines 1624, 1636-1639 correspond either.

[0098]furthermore — passing the signal wire 1613 in recording schedule management and the appliance control part 1605 — a time check — it starts [recording start / for every recording and playback equipment /, finish time, or playback] for the means 1606, and finish time is set as it. a time check — by the means 1606, if time is clocked by holding a difference with the present time in a memory about each time, and subtracting constant value from the value of a memory for every unit time and a difference is set to 0, it will notify to recording schedule management and the appliance control part 1605 via the signal wire 1613.

[0099]recording schedule management and the appliance control part 1605 — a time check — if the notice from the means 1606 is received, directions of a recording start and an end, a playback start and an end, display control, etc. will be sent to recording and the playback equipment concerned via the transmission and reception section 16002 and the signal wire 1627. Issue directions of a change on the switch 1608 via the signal wire 1618, and with the switch 1608 with directions of this change. An internal-matrix switch is changed based on a recording schedule, and an image and the voice input 1632-1635 are connected to an image and the voice response 1624, 1636-1639 corresponding, respectively. Directions of a stop will be sent, if it can come, simultaneously recording directions are sent to recording and the playback equipment concerned via the transmission and reception section 16002 and the signal wire 1627 in recording schedule management and the appliance control part 1605 and the notice of recording finish time comes. When a playback start notice and a playback terminating notice are received, reproduction instruction and directions of a stop are similarly sent to recording and the playback equipment concerned via the signal wire 1627, respectively. When recording by being interlocked with other recording and playback equipment, it cannot be overemphasized that the accuracy of recording can be raised by performing control of a common synchronized signal and a time code. [0100]Next, operation of recording and the playback equipment 1502-1505 is explained in more detail using drawing 18. By drawing 18, the existence of wearing of the tape in recording and playback equipment and the kinds (picture recording times etc.) of tape with which it is equipped are detected in the media classification primary detecting element 17001. In an image and the voice recording regenerating section 1707, the position of the present tape is detected based on the control signal currently recorded synchronizing with the video signal. In the appliance control part 1705, while acquiring these information via the signal wire 1731 and the signal wire 1717, These information is provided based on the communications protocol beforehand set that there is an inquiry from recording and a regeneration control device via the signal wire 1734, the transmission and reception section 17002, and the signal wire 1733.

[0101]Based on directions of the display control from recording and a regeneration control device, directions of a change of the switch 1700 are taken out with the appliance control part 1705 via the signal wire 1732, This outputs the video signal 1424 and the audio signal 1423 which are outputted from an image and the voice recording regenerating section 1407 with the switch 1708 to the video voice signal line by which the video voice signal lines 1428-1430 correspond either.

[0102]In the appliance control part 1705, if directions of a recording start are received from recording and a regeneration control device via the signal wire 1734, the transmission and reception section 17002, and the signal wire 1733, Issue directions of a change on the switch 1700 via the signal wire 1732, and with the switch 1700 with directions of this change. The video signal 1716 from the tuner 1704, the audio signal 1715, and the input signal with which it corresponds of the video voice signals 1726 from other recording and playback equipment are outputted to the video signal line 1721 and the audio signal line 1720. If it can come, simultaneously recording directions are sent to an image and the voice recording regenerating section 1707 via the signal wire 1717 in the appliance control part 1705 and directions of a recording end come from master side recording and playback equipment, directions of a stop will be sent to an image and the voice recording regenerating section 1707 via the signal wire 1717. When a reproduction start notice and a reproduction terminating notice are received, reproduction instruction and directions of a stop are similarly sent to an image and the voice recording regenerating section 1707 via the signal wire 1717, respectively.

[0103]In an image and the voice recording regenerating section 1707, if recording directions are received, the recording of the image and sound of the video signal line 1721 and the audio signal line 1720 will be started, and recording will be ended with directions of a stop. In an image and the voice recording regenerating section 1707, when reproductive directions are received from the appliance control part 1705 via the signal wire 1717, the head is pulled out by rewinding or

sending a tape to the specified position, playback is started, and playback is ended with directions of a stop. When directions of the program recording from [from master side recording and playback equipment] a tuner come, Directions delivery of setting out of the channel specified to the tuner 1704 via the signal wire 1714 in the appliance control part 1705, Based on this, by the tuner 1704, the image of the channel of inner specification of the video signal from the video signal line 1710 is separated, and a video signal and an audio signal are outputted to the video signal line 1716 and the audio signal line 1715, respectively. Since it is the same as that of Embodiment 5 about operation of the remote controller 1506, and operation of the display 1508, it omits.

[0104]By performing schedule control same with having explained using 10 figures in Embodiment 3 here, According to this invention, efficient recording and editing work unrealizable only by recording individually with two or more recording and playback equipment which employed the recording and the regenerative function of two or more recording and playback equipment in full efficiently are realizable.

[0105]

[Effect of the Invention]As mentioned above, it becomes possible by using this invention to perform scheduling of finer reservation of picture recording to the 1st by synthesizing information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc.

[0106]By providing the means of communication which can communicate both directions [recording and playback equipment, and / recording and a regeneration control device] respectively, to the 2nd, information, including the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, etc., can be exchanged automatically, and user-friendliness is substantially improved.

[0107]More advanced schedule organization of the dubbing compilation etc. which used the idle time of reservation of picture recording for the 3rd, for example when recording and a regeneration control device grasped the connection situation of each apparatus is also attained.

[0108]While recording and a regeneration control device judge the demand of a user's rebirth, reservation confirmation, etc. to the 4th and takes out reproductive directions to it at predetermined recording and playback equipment, complicated operation becomes unnecessary by directing to display the image and voice response of its recording and playback equipment also to a display.

[0109]By providing the means of communication which can communicate both directions [recording and playback equipment, and / recording and a regeneration control device] respectively in the 5th, When recording and a regeneration control device grasp the model of two or more recording and playback equipment, the situation of performance and the media with which it equips, and the connection situation of each apparatus in response to information from recording and playback equipment, advanced recording schedule organization can be performed more smoothly.

[0110]the recording and playback equipment of the 6th master side -- a time check -- by giving the function of a means and schedule management, the composition of the recording and playback equipment of many slave sides can be simplified, and recording and a reproducing system low cost as a whole can be built.

[0111]By carrying out switchover control of the input and output of the video voice signal between two or more recording and playback equipment, and a display to the 7th by a matrix switcher, It makes it possible to perform the playback and the display, and dubbing of a video voice signal between the appointed devices, without increasing the input/output terminal of each recording and playback equipment, and a display.

[Translation done.]

* NOTICES *

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]The figure showing the connecting relation of the recording and the regeneration control device in the 1st embodiment and 4th embodiment of this invention, recording and playback equipment, and a display

[Drawing 2]The figure showing the composition of the recording and the regeneration control device in the 1st embodiment and 4th embodiment of this invention

[Drawing 3]The figure showing the composition of the recording and playback equipment in the 1st embodiment and 4th embodiment of this invention

[Drawing 4]The figure showing the composition of the display in the 1st embodiment and 4th embodiment of this invention

[Drawing 5]The figure showing the composition of the recording and the regeneration control device in a 2nd embodiment of this invention

[Drawing 6]The figure showing the composition of the recording and playback equipment in a 2nd embodiment of this invention

[Drawing 7]The figure showing the exchange of the control information between the recording and the regeneration control device, and each recording and playback equipment in a 2nd embodiment of this invention

[Drawing 8]The figure showing the composition of the recording and playback equipment in a 3rd embodiment of this invention

[Drawing 9]The figure showing the connecting relation of the recording and the regeneration control device in the 3rd embodiment and 5th embodiment of this invention, recording and playback equipment, and a display

[Drawing 10]The figure showing the composition of the recording and playback equipment in a 5th embodiment of this invention

[Drawing 11]The figure for explaining the schedule of the recording and playback in the 3rd embodiment and 5th embodiment of this invention

[Drawing 12]The figure showing the connecting relation of the remote controller in a 6th embodiment of this invention, recording and a regeneration control device, recording and playback equipment, and a display

[Drawing 13]The figure showing the composition of the remote controller in a 6th embodiment of this invention

[Drawing 14]The figure showing the composition of master-side recording and playback equipment in a 6th embodiment of this invention

[Drawing 15]The figure showing the composition of the recording and playback equipment of the slave side in a 6th embodiment of this invention

[Drawing 16]The figure showing the connecting relation of the remote controller in a 7th embodiment of this invention, recording and a regeneration control device, recording and playback equipment, and a display

[Drawing 17]The figure showing the composition of the recording and the regeneration control device in a 7th embodiment of this invention

[Drawing 18]The figure showing the composition of the recording and playback equipment in a 7th embodiment of this invention

[Drawing 19]The lineblock diagram of the remote control in a conventional example

[Description of Notations]

101 Distributor

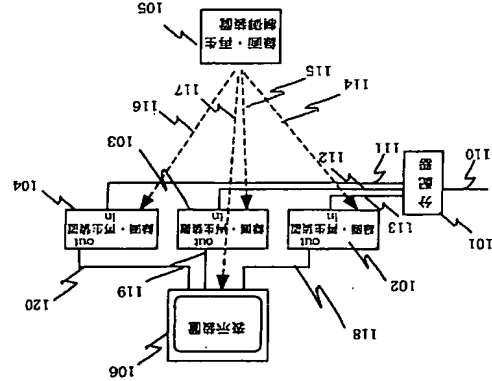
102-104 Recording and playback equipment

105 Recording and a regeneration control device
106 Display
110-113, 118-120 Video voice signal line
114-117 Controlling signal line
201 Transmission section
202 Recording schedule management section
203 Operation input section
204 Indicator
211-213 Signal wire
301 Recording and playback equipment
302 Identification code setting-out means
303 Receive section
304 Tuner
305 Appliance control part
306 a time check — a means
307 An image and a voice recording regenerating section
308 Switch
309 Character generation part
310 Video voice signal line
311-314, 317-319 Controlling signal line
315, 320, and 323 Audio signal line,
316, 321, 322, and 324 Video signal line
408 Display
401 Identification code setting-out means
402 Receive section
403 Display control part
404 Voice output part
405 Character generation part
406 Switch
407 Image display
410, 414-417, 420, and 422 Controlling signal line
411-413 Video voice signal line
418 Audio signal line
419 and 421 Video signal line
501 Transmission and reception section
502 Recording schedule management section
503 Operation input section
504 Indicator
511-513 Signal wire
601 Recording and playback equipment
602 Identification code setting-out means
603 Receive section
604 Tuner
605 Appliance control part
606 a time check — a means
607 An image and a voice recording regenerating section
608 Switch
609 Character generation part
6001 Media classification primary detecting element
610 Video voice signal line
611-614, 617-619, and 631 Controlling signal line
615, 620, and 623 Audio signal line
616, 621, 622, and 624 Video signal line
701 Recording and playback equipment
702 Identification code setting-out means
703 Receive section
704 Tuner
705 Appliance control part
706 a time check — a means

707 An image and a voice recording regenerating section
708 Switch
709 Character generation part
710, 726-730 Video voice signal line
711-714, 717-719, and 732 Controlling signal line
715, 720, and 723 Audio signal line
716, 721, 722, and 724 Video signal line
801 Distributor
802-804 Recording and playback equipment
805 Recording and a regeneration control device
806 Display
810-813, 817-825 Video voice signal line which passes a video voice signal
814-817, and 826 Controlling signal line
901 Recording and playback equipment
902 Identification code setting-out means
903 Transmission and reception section
904 Tuner
905 Appliance control part
906 a time check — a means
907 An image and a voice recording regenerating section
908 Switch
909 Character generation part
9001 Media classification primary detecting element
910, 926-930 Video voice signal line
911-914, 917-919, 931, and 932 Controlling signal line
915, 920, and 923 Audio signal line
916, 921, 922, and 924 Video signal line
1101 Distributor
1102-1104 Recording and playback equipment
1105 Remote controller
1106 displays
1110-1113, 1116-1124 Video voice signal line which passes a video voice signal
1114 and 1115 Controlling signal line
1201 Transmission section
1202 Control section
1203 Operation input section
1204 Indicator
1211-1213 Signal wire
1301 Master side recording and playback equipment
1302 Identification code setting-out means
1303 Receive section
1304 Tuner
1305 Recording schedule management and an appliance control part
1306 a time check — a means
1307 An image and a voice recording regenerating section
1308 Switch
1309 Character generation part
1300 Switch
13001 Media classification primary detecting element
13002 Transmission and reception section
1310, 1328-1330, 1333, and 1334 Video voice signal line
1311-1314, 1317-1319 Controlling signal line
1326, 1327, 1331, and 1332 Controlling signal line
1315, 1320, and 1323 Audio signal line
1316, 1321, 1322, and 1324 Video signal line
1401 Slave side recording and playback equipment
1404 Tuner
1405 Appliance control part
1407 An image and a voice recording regenerating section

1408 Switch
1300 Switch
14001 Media classification primary detecting element
1410, a 1426 – 1430 video-voice-signal line
1411–1412, 1414, a controlling signal line
1417–1418, 1431–1434 Controlling signal line
1415, 1420, and 1423 Audio signal line
1416, 1421, and 1424 Video signal line
1501 Distributor
1502–1504 Recording and playback equipment
1506 Remote controller
1507 Recording and a regeneration control device
1508 Display
1510–1514, 1517–1125 Video voice signal line which passes a video voice signal
1515 and 1516 Controlling signal line
1601 Recording and a regeneration control device
16002 Transmission and reception section
1603 Receive section
1605 Recording schedule management and an appliance control part
1606 a time check — a means
1608 Switch
1609 Character generation part
1612–1614, 1618, 1619, 1626, and 1627 Signal wire
1622 Video signal line
1624, 1632–1635, 1636–1639 Video voice signal line
1625 Controlling signal line
1701 Recording and playback equipment
1700 Switch
17001 Media classification primary detecting element
17002 Transmission and reception section
1704 Tuner
1705 Appliance control part
1707 An image and a voice recording regenerating section
1710 and 1726 Video voice signal line
1714, 1717, 1731, 1732, 1733, and 1734 Signal wire
1715, 1720, and 1723 Audio signal line
1716, 1721, and 1724 Video signal line
1801 Specification matter input part
1802 Recording ranking input part
1803 Final controlling element
1804 Tape information input part
1805 Control section
1806 Storage parts store
1807 Transmit code generation part
1808 Transmission section

[Translation done.]



生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てることが可能であることを特徴とする請求項5または10記載の装置・再生システム。

【請求項12】 録画スケジュール編成のための情報が、録画・再生装置の環境、録画・再生装置の有無、装置・再生装置の性能、録画メディアの装着の有無、装着されている録画メディアの録画可能時間または容量、装着されている録画メディアの未使用時間または容量、装着されている録画メディアの履歴、録画チャネル毎の時間割を含む録画予約情報、録画・再生装置間の接続状態、録画・再生装置と表示装置間の接続状態のいずれか1つ以上であることを特徴とする請求項4または6、または9乃至12のいずれかに記載の装置・再生システム。

【請求項13】 表示装置、録画・再生装置毎の制御コードおよび各録画・再生装置と表示装置間の接続状態を記憶しておくメモリを有する録画・再生制御装置から、記憶しておくメモリを有する録画・再生制御装置への制御信号によって再生を指定した録画・再生装置からの映像、音声信号を、再生と同時に選択し表示するように、表示装置に制御信号を送信することを特徴とする請求項1または2または6記載の装置・再生制御装置。

【請求項14】 放送番組の選局を行う選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備え、録画・再生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てることが可能な複数の録画・再生装置と、

録画・再生制御装置からの制御信号を受ける受信部と受信部で受けた録画・再生制御装置からの制御信号を基にスイッチを制御して映像・音声の入力の切り替えを行う表示制御部とを少なくとも有する表示装置と、

複数の録画・再生装置間の録画予約を入力するデータ入力手段と、録画スケジュール編成のための情報を入力された録画予約の各録画・再生装置への割り当てのスケジュール編成を行う録画スケジュール管理手段と、各録画・再生装置に对应した制御コードにより制御信号を各録画・再生装置に送信する送信部と、表示装置、録画・再生装置毎の制御コードおよび各録画・再生装置と表示装置間の接続状態を記憶しておくメモリを有する表示制御装置からの制御信号によって再生を指定した録画・再生装置からの映像・音声信号を、再生と同時に選択し表示するように表示装置に制御信号を送信する録画・再生制御装置とから構成され、指定の映像・再生装置からの映像の再生に合わせ表示装置の表示を切り替えることを可能とする装置・再生システム。

【請求項15】 放送番組の選局を行う選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、録画・再生装置毎の制御コードおよび各録画・

再生装置間の接続状態および録画予約を記憶しておくメモリと、録画予約の各録画・再生装置への割り当てのスケジュール編成を行う録画スケジュール管理手段とを内蔵し、マスター側装置として他のスレーブ側の録画・再生装置の録画・再生の制御を行うことが可能な装置・再生装置。

【請求項16】 放送番組の選局を行う選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、録画・再生装置毎の制御コードおよび各録画・再生装置間の接続状態および録画予約を記憶しておくメモリと、録画予約の各録画・再生装置への割り当てのスケジュール編成を行う録画スケジュール管理手段とを内蔵し、かつマスター側の録画・再生装置と、マスター側の録画・再生装置からの制御信号を受信する受信手段と、放送番組の選局を行う選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備え、識別コードにしたがってマスター側の録画・再生装置からの制御信号を受信し、録画スケジュールに沿った録画・再生を行うスレーブ側の録画・再生装置とから構成され、

マスター側の録画・再生装置には計時手段を備える一方、スレーブ側の録画・再生装置には計時手段の無い録画・再生装置を用い、マスター側の録画・再生装置の計時手段で全てのスレーブ側の各録画・再生装置の録画・再生のスケジュール管理を行い、録画時間になるとマスター側からスレーブ側の装置に対して制御信号を送信して録画を行うことを特徴とする装置・再生システム。

【請求項17】 計時手段と複数の映像・音声信号の入出力を切り替えるマトリックス・スイッチと、録画予約の各録画・再生装置への割り当てのスケジュール編成を行うスケジュール管理手段と、複数の録画・再生装置を行うスケジュール管理手段と、各録画・再生装置に对应した制御コードにより制御信号を各録画・再生装置に送信する送信手段とを具備し、録画予約に基づいて複数の録画・再生装置の録画・再生のスケジュールを定め、各録画・再生装置の録画・再生の制御を行うとともに、マトリックス・スイッチを制御して映像・音声信号の入出力を切換制御することを特徴とする装置・再生制御装置。

【請求項18】 計時手段と複数の映像・音声信号の入出力を切り替えるマトリックス・スイッチと、録画予約の各録画・再生装置への割り当てのスケジュール編成を行うスケジュール管理手段と、複数の録画・再生装置を制御する制御手段と、各録画・再生装置に对应した制御コードにより制御信号を各録画・再生装置に送信する送信手段とを具備し、録画予約に基づいて複数の録画・再生装置の録画・再生のスケジュールを定め、各録画・再生装置の録画・再生の制御を行うとともに、マトリックス・スイッチを制御して映像・音声信号の入出力を切換制御する装置・再生制御装置と。

放送番組の選局を行う選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備えた複数の録画・再生装置と、

録画・再生制御装置からの制御信号を受ける受信部と受信部で受けた録画・再生制御装置からの制御信号を基にスイッチを制御して映像・音声の入力の切り替えを行う表示制御部とを有する表示装置とを少なくとも構成要素に持ち、複数の録画・再生装置同士または複数の録画・再生装置と表示装置間の映像・音声信号の入出力を録画・再生制御装置のマトリックス・スイッチで制御制御することにより予約録画を行うことを特徴とする装置・再生システム。

【発明の詳細な説明】
【0001】
【発明の属する技術分野】 本発明は、映像情報を効果的に予約録画する装置・再生装置に関するものである。

【0002】
【従来の技術】 従来、複数の録画装置を利用して予約録画を行うシステムとして、特開平5-28278号に記載された選局制御装置がある。これは、1本の磁気テープに記録された長時間番組について、複数の録画装置を用いて複数の磁気テープに映像を分割することなく連続して録画することを可能とするものである。以下、図面を用いて、従来の説明を行う。図1は従来の例における選局制御装置の構成図である。図1.9において、符号1801は複数の録画装置の中から特定の装置にのみ送信コードを転送するためのコードを設定する指定事項入力部、1802は録画装置の録画頭番を入力する録画頭番入力部、1803は操作部、1804はテープ情報入力部、1805は制御部、1806は記憶部、1807は送信コード生成部、1808は送信部である。先ず、予め指定事項入力部1801から使用する録画装置毎に指定事項の入力を行うべく、指定事項入力部1801では、入力された指定事項を記憶部1806に記憶する。また、1803の操作部入力部から録画装置の録画する頭番の入力を行う。録画頭番入力部1802では入力された録画装置の録画の頭番を記憶部1806に記憶する。また、テープ情報入力部1804で、頭々の録画装置に挿入する磁気テープの巻数を時間で情報として入力する。テープ情報入力部1804では、この情報を制御部に転送する。さらに、操作部1803から録画装置の録画開始時刻、録画終了時刻、放

送チャネル等の録画予約情報を入力し、操作部1805では、この情報を制御部へ転送する。制御部1805では、記憶部1806に記憶された録画装置毎の指定事項と録画頭番を照合出し、これと操作部1803から受け取った各録画装置の録画予約情報と、テープ情報入力部1804から受け取った磁気テープの巻数とから個々の録画装置に対する録画予約内を決定し、個々の録画装置に

装置に対する録画予約に必要な情報を送信コード生成部1807へ転送する。送信コード生成部1807では、個々の録画装置の録画予約と指定事項を送信コードに変換し送信部1807へ送る。送信部1807では、受け取った送信コードを所定の信号方式にして録画装置へ送信する。これによって、長時間番組の複数の録画装置を利用した録画が可能となる。

【0003】
【発明が解決しようとする課題】 録画・再生装置の普及により誰でも手軽に映像を録画に楽しめるようになつた。複数の番組の録画予約やリビングのために複数の録画装置を使用する場合も多くなり得るようになってきた。また、録画・再生装置もBS放送対応のものからHi-Fi (High Fidelity) 音声の録音機能の付いたものや録画方式の違いなど色々な種類の装置が提供されている。このような状況において、複数の番組の録画予約を行う場合、どの装置にどの番組を録画予約したいかいろいろと迷って人間が判断して各録画・再生装置毎に付属する録画予約装置で、異なる録画予約手順で番組の予約を行わなければならないため、手間がかかったり録画に失敗したりするといった問題が生じて来ている。従来例に示した選局制御装置では、複数の録画装置を用いて長時間番組を録画することと可能としたが、長時間番組の予約を主眼としたものであり、複数の録画・再生装置を駆使して複数の番組を自在に録画、再生して得ることは考慮されていなかった。また、消去した所を録めなどといった処理が出来ない他、モニタで複数の録画・再生装置の録画内容を確認したり、録画した映像を再生する場合、いちいち手でモニタの表示を切り替える必要があった。

【0004】 本発明は上記従来の問題点に鑑みてなされたもので、その第1の目的は、映像情報を効果的に予約録画することのできる装置・再生装置を提供することである。

【0005】 本発明の第2の目的は、複数の録画・再生装置を駆使して複数の番組を自在に録画、再生することのできる装置・再生装置を提供することである。

【0006】 本発明の第3の目的は、録画予約の空を時間を利用して録画などのより高度なスケジュール編成が可能な装置・再生装置を提供することである。

【0007】
【課題を解決するための手段】 この課題を解決するためには、本発明は第1に、外部からの制御信号により、指定した時刻に指定した番組の録画・再生を行うことが可能な複数の録画・再生装置と、それらの録画・再生装置に制御信号により録画、再生の指示を与える録画・再生制御装置とにおいて、録画・再生装置にはそれぞれの録画・再生装置を識別するための識別コードを割り当て、録画・再生制御装置はこれらの識別コードおよび操作入力部から入力された録画チャネルや録画時間を含む録画予

項5または10記載の録画・再生システムにおいて、複数の録画・再生装置は、各録画・再生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てることが可能であるようにしたものであり、複数の録画予約スケジュールを管理するという作用を有する。

【0025】本発明の請求項12に記載の発明は、請求項4または5、または9乃至12のいずれかに記載の録画・再生システムにおいて、録画スケジュール構成のため、録画・再生装置の間の情報、録画・再生装置の種類の情報、録画・再生装置の性能、録画メディアの装填の有無、装着されている録画メディアの録画可能時間または容量、装着されている録画メディアの録画済み時間または容量、装着されている録画メディアの種類の情報、録画メディアの録画時間と各録画予約情報、録画・再生装置間の接続状態の情報を総合する事により、よりきめ細かい録画予約のスケジュールリングを行うことができるという作用を有する。

【0026】本発明の請求項13に記載の発明は、請求項1または2または6記載の録画・再生制御装置において、表示装置、録画・再生装置毎の制御コードおよび録画・再生装置と表示装置間の接続状態を記憶しておくメモリを持ち、録画・再生制御装置からの制御信号によって再生を指定した録画・再生装置からの映像・音声信号を、再生と同時に選択し表示するように表示装置に制御信号を送信するようにしたものであり、再生処理によりユーザは再生番組の内容をより一層知ることができ、という作用を有する。

【0027】本発明の請求項14に記載の発明は、録画・再生システムを、放送番組の選局を行なう選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備え、録画・再生装置毎に異なる制御コードを持つまたは、異なる制御コードを割り当てることが可能な複数の録画・再生装置と、録画・再生制御装置からの制御信号を受ける受信部と受信部で受けた録画・再生制御装置からの制御信号を基にスキャンを制御して映像・音声の入力の切り替えを行う表示制御部とを少なくとも有する表示装置、複数の録画・再生装置に関する録画スケジュール構成のための情報および複数の録画予約の入力するデータ入力手段と、録画スケジュール構成のための情報を基に入力された録画予約の各録画・再生装置への割り当ての順序、録画・再生装置に格納された制御コード・再生装置に格納された制御信号を、録画・再生装置に送信する送信手段と、表示装置、録画・再生装置毎の制御コードおよび各録画・再生装置と表示装置間の接続状態を記憶してお

各録画・再生装置の録画・再生制御を行うとともに、マトリックス・スイッチを制御することにより、個々の録画・再生装置および表示装置の出力端子を切り替えることなべく映像・音声信号の入出力を切り替制御することを可能にするという作用を有する。

【0031】本発明の請求項18に記載の発明は、録画・再生システムに、計時手段と複数の映像・音声信号の入出力を切り替えるマトリックス・スイッチと、録画予約の各録画・再生装置への割り当てのスケジュール構成を行うスケジューラ管理手段と、複数の録画・再生装置を制御する制御手段と、各録画・再生装置に格納した制御コードにより制御信号を各録画・再生装置に送信する送信手段とを具備し、録画予約に基づいて複数の録画・再生装置の録画・再生のスケジュールを組み、各録画・再生装置の録画・再生制御を行うとともに、マトリックス・スイッチを制御して映像・音声信号の入出力を切り替制御する録画・再生制御装置と、放送番組の選局を行なう選局手段と、映像情報または音声情報を記録する映像・音声記録再生手段と、自己の識別コードを設定する識別コード設定手段とを備えた複数の録画・再生装置と、録画・再生制御装置からの制御信号を受ける受信部と受信部で受けた録画・再生装置からの制御信号を基にスケジュール構成とを有する表示装置とを少なくとも備えたものであり、複数の録画・再生装置同士または複数の録画・再生装置と表示装置間の映像・音声信号の入出力を録画・再生制御装置のマトリックス・スイッチで制御制御することにより予約録画を行なうという作用を有する。

【0032】以下、本発明の実施の形態について、図1から図18を用いて説明する。

【0033】(実施の形態1) 図1は本発明の第1の実施の形態における録画・再生制御装置と録画・再生装置の間の接続関係を示すブロック図、図2は本発明の第1の装置の形態における録画・再生制御装置の詳細な構成を示すブロック図、図3は本発明の第1の実施の形態における録画・再生装置の詳細な構成を示すブロック図、図4は本発明の第1の実施の形態における表示装置の詳細な構成を示すブロック図である。図1において、符号101は分配器、102～104は映像・再生装置、105は表示装置、106は表示装置、110～113および118～120は映像・音声信号を流す映像・音声信号線、114～117は制御信号線、図2において、符号105は録画・再生制御装置、201は送信部、202は受信部、スケジューラ管理手段、203は操作入力部、204は表示部、211～213は信号線、図3において、符号301は録画・再生装置、302は識別コード設定手段、303は受信部、304はチューナ、305は機器制御部、306は計時手段、307は映像・音声記録再生部、308はスイッチ、309は文字生成部、310は映像・音声信号線、

311～314および317～319は制御信号線、315、320、323は音声信号線、316、321、322、324は映像信号線、図4において、符号106は表示装置、401は識別コード設定手段、402は受信部、403は表示制御部、404は音声出力部、405は文字生成部、406はスイッチ、407は映像表示部、410、414～417、420、422は制御信号線、411～413映像および音声信号線、418は音声信号線、419、421は映像信号線を、録画・再生装置100341以上のように構成された録画・再生制御装置、録画・再生装置、表示装置について、以下その動作を説明する。図上では3台の録画・再生装置を用いて予約録画を行う場合について示してある。図1を用いて先ず図1に予約録画の動作を説明する。

【0035】CATVやアンテナで受信した映像信号110（一般的には、映像信号、音声信号、データが多量にされた信号であるが、ここでは簡便のため映像信号と呼ぶことにする）は、分配器101で分配され信号線111～113を介して各録画・再生装置に入力されている。録画・再生制御装置105では、録画予約に必要な情報、他の各録画・再生装置に関する情報を入力すると自動的に各録画・再生装置の録画予約のスケジュールを算出する。スケジュール構成結果を記憶した後、信号線114～116を介して各録画・再生装置に録画予約データを送信する。このときの録画予約状況を信号線117を介して表示装置106に表示の制御信号の指示を送り、映像信号118～120の中から対応する録画・再生装置からの映像信号を選択し、映像を表示して制御することが出来る。これらの信号線114～117は仮想的なもので、実際には赤外光などによる無線を使用してもよい。録画・再生装置102～104では予約した番組の開始時刻が来ると指定したチャンネルの映像・音声の録画を行う。

【0036】ここで、録画・再生制御装置の動作について図2を用いてさらに詳しく説明する。このときの録画・再生装置の動作について図3を用いて説明する。先ず、受信部303では、録画・再生制御装置から送られてきた録画予約データ機器制御に関する制御信号325を受信すると識別コード設定手段302から信号線422を受信すると識別コード設定手段302から信号線422を受信して受け取った識別コードを確認し、受信した制御信号が自身に与えられたものであると判断するとその内容を録画・再生装置が記憶する場合、特定の装置に対してのみ制御信号を送るために予約識別コードを設定手段302で他の装置との識別するためのコードを設定しておく。この場合、録画・再生制御装置でも同様の設定を行う。識別コードの設定はDIPスイッチやメニュー画面からの選択で行う。機器制御部305では受信メッセージが録画予約要求の場合、録画予約データ等を信号線319を介して文字生成部309へ送る。文字生成部309で

更要求メッセージに対して録画予約変更受付メッセージを返すことにより確認が行われる。このように録画・再生制御装置と録画・再生装置間で双方方向の通信機能を組み込むことにより、例えば、録画・再生装置が故障して録画予約受付メッセージが返って来ない場合や、録画終了時間が過ぎても録画終了通知が返って来ないなどの場合に、再生装置に張り着きなどの再スケジュールリング処理が行われ、録画の失敗を回避出来る。

【0046】(実施の形態3) 図1は本発明の第3の実施の形態における録画・再生装置の構成を示す図、図2は本発明の第3の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図、図3は本発明の第3の実施の形態における録画・再生のスケジュールを説明するための図である。図9中の録画・再生制御装置805の内部構成については本発明の第1の実施の形態における図1の構成と同じであり、図9中の表示装置806の構成を示す図と同様で、図9中の録画・再生装置806の内部構成については本発明の第1の実施の形態における図4の表示装置の構成を示す図と同様である。図9の801は分配器、802～804は録画・再生装置、805は録画・再生制御装置、806は表示装置、810～816は録画・再生装置806は映像・音声信号を流す映像・音声信号線、814～817および26は制御信号線、図8の701は録画・再生装置、702は識別コード設定手段、703は受信部、704はチューナ、705は機器制御部、706は計時手段、707は映像・音声信号線、708はスイッチ、709は文字生成手段、710および726～730は映像・音声信号線、711～714および717～719、732は制御信号線、715、720、723は音声信号線、716、721、722、724は映像信号線を示す。

【0047】以上のように構成された録画・再生制御装置、録画・再生装置、表示装置について、以下その動作を説明する。図9では3台の録画・再生装置を用いて相互に連携して予約録画を行う場合の構成を示す図で、本実施の形態では各録画・再生装置802～804および表示装置806は受信機として機能しないものとする。図9を用いて、まず簡単にその動作を説明する。CATVやアンテナで受信した映像信号810は、分配器801で分配され信号線811～813を介して各録画・再生装置に入力されている。録画・再生制御装置805では、録画予約に必要な情報の他各録画・再生装置に関する情報を入力すると自動的に各録画・再生装置の録画予約のスケジュールを調整する。スケジュール調整結果を確認した後、信号線814～816を介して各録画・再生装置に録画予約データを送信する。このときの録画予約状況を信号線826を介して表示装置806に表示の切替制御の指示を送り、映像信号819、822、825のなかから対応する録画・再生装置からの映像信号を選択

け付けると信号線213を介して録画スケジュール管理部202に通知され、録画スケジュール管理部202では決定した各録画・再生装置毎の録画予約データを信号線211を介して送信部201へ送り、送信部201では各録画・再生装置毎の制御コードを録画・再生装置へ送信する。同一機種の間のコードの映像用と音声用の装置の識別コードが設定されている場合はその識別コードを付けて送信される。

【0051】このときの録画・再生装置の動作について図8を用いて説明する。受信部703では、録画・再生制御装置から送られてきた録画予約データと機器制御に関する制御情報725を受信すると識別コード設定手段702から信号線722を介して受け取った識別コードを確認し、受信した制御情報が自身に於いたものであると判断するとその内容を信号線712を介して機器制御部705へ送す。ここで、録画・再生装置が復数の場合、特定装置に対してのみ制御情報を送るために予め識別コードを設定しておく。この場合、録画・再生制御装置側でも同様の設定を行う。識別コードの設定はDIPスイッチやメニュー画面からの選択で行う。

【0052】機器制御部705では受信メッセージが録画予約要求の場合、録画予約データ等を内部メモリに保持するとともに信号線718を介して文字生成部709へ送り、文字生成部709では、受け取った文字情報を映像信号線722に出力する。

【0053】また、機器制御部705では、録画・再生制御装置からの制御情報や録画スケジュールに基づいて信号線718を介してスイッチ708の切替の指示を出し、これによりスイッチ708では文字生成部709から出力される映像信号722または映像・音声記録再生部707から出力される映像信号724および音声信号723の内蔵するものを映像・音声信号線728～730のいずれか該当する映像・音声信号線に出力する。

【0054】さらに、機器制御部705では、信号線713を介して計時手段706に録画開始、終了時刻や再生開始、終了時刻を設定する。計時手段706ではそれらの時刻について現在の時刻との差をメモリに保持し単位時間毎にメモリ値から一定値を減算することで時面を計時し、差が0になると信号線713を介して機器制御部705に通知する。機器制御部705では、録画開始時刻の通知を受け取ると信号線732を介してスイッチ700に切替の指示を出し、スイッチ700ではこの切替の指示により、録画スケジュールに基づいてチューナ704からの映像信号716と音声信号715と他の2台の録画・再生装置からの映像・音声信号726、727の内いずれか一組を選択し、映像信号線721および音声信号線720に出力する。また、これと同時に、機器制御部705では映像・音声記録再生部707に信号線717を介して録画指示を送り、録画終了

時刻の通知が来ると映像・音声記録再生部707に信号線717を介して停止の指示を送る。再生開始通知、再生終了通知を受け取った場合は同時に信号線717を介して映像・音声記録再生部707にそれぞれ再生指示、停止の指示を送る。映像・音声記録再生部707では、録画指示を受け取ると映像信号線721および音声信号線720の映像・音声の録画を開始し停止の指示により録画を終了する。また、映像・音声記録再生部707では、機器制御部705から信号線717を介して再生の指示を受けた場合、指定の位置までテープを巻き戻し、または送って出しを行い再生を開始し、停止の指示で再生を終了する。なお、他の録画・再生装置と連動して録画を行う場合、共通の同期信号とタイムコードの制御を行うことで録画の精度を上げることができるとは言えない。

【0055】録画の対象がチューナ704からの番組の場合、機器制御部705では信号線714を介してチューナ704に対して指定したチャンネルの設定の指示を送り、これに基づいて、チューナ704では映像信号線710からの映像信号の内指定のチャンネルの映像を分離して映像信号線716および音声信号線715をそれぞれ映像信号および音声信号を出力する。なお、それぞれの表示装置の動作については本発明の実施の形態1の説明と同様であるので説明を省略する。

【0056】ここで、図11を用いて3台の録画・再生装置を使用した録画予約のスケジュールングの方法の例を説明する。図11の上部には、録画予約する番組およびそれを放送しているチャンネルと放送時刻の関係を示している。便宜上録画予約する番組に(1)～(7)の番号をふってあり、同じヘッディングを施したものは同一シリーズの番組(連続ドラマ等、この例では(1)～(3)と(4)と(5))を放送。また録画・再生装置1～3には同じ容量のテープが装着されているものとす。録画予約する番組がこのような関係にある場合、録画スケジュール管理部502では、先ず録画・再生装置1に対して(1)の番組の録画予約を割当て、次に同じ時間帯にある(4)、(6)、(7)を3台の録画・再生装置1～3にそれぞれ録画予約を割当てる。次に(4)と(7)の録画が終了し、その後(2)の録画が始まるまでの間で録画・再生装置1は録画した(7)の番組を再生し、これを録画・再生装置3にコピーするよう録画・再生装置1に(2)、(3)の番組の予約にそれぞれ別の装置に再生および録画の予約を割当てる。さらに録画・再生装置1に(2)、(3)の番組の録画予約を、録画・再生装置2に(5)の番組の録画予約をそれぞれ割当てる。これによりシリーズの番組を同時に収録することが出来る他、テープの録画時間を最大限に利用することが可能となる。

【0057】(実施の形態4) 図1は本発明の第4の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図、図2は本発明の第4

けることができることは言うまでもない。

【0071】録画の対象がチューナー904からの番組録画の場合、機器制御部905では信号線914を介してチューナー904に対して指定したチャネルの放送の指示を送り、これに基づいて、チューナー904では映像信号線910からの映像信号の内部のチャネルの映像を分離して映像信号線916および音声信号線915へそれぞれ映像信号および音声信号を出力する。なお、このときの表示装置の動作については本発明の実施の形態1の説明と同様であるので説明を省略する。

【0072】ここで、実施の形態3において図11を使って説明したと同様なスケジュール制御を行うことにより、本発明によれば、複数の録画、再生装置で個別に録画を行うだけでは実現できない、複数の録画・再生装置の録画・再生機能をフルに生かした効率的な録画・編集作業が実現できる。

【0073】(実施の形態6) 図12は本発明の第6の実施の形態におけるリモート制御装置、マスター側録画・再生装置、スレーブ側録画・再生装置、表示装置の接続関係を示す図、図13は本発明の第6の実施の形態におけるリモート制御装置の構成を示す図、図14は本発明の第6の実施の形態におけるマスター側録画・再生装置の構成を示す図、図15は本発明の第6の実施の形態におけるスレーブ側録画・再生装置の構成を示す図である。図12中の表示装置1106の内部構成については本発明の第1の実施の形態における図4の表示装置の構成を示す図と同様である。

【0074】図12において、符号1101は分配器、1102～1104は録画・再生装置、1105はリモート制御装置、1106は表示装置、1110～1113および1116～1124は映像、音声信号を渡す映像・音声信号線、1114、1115は制御信号線、図13において、符号1201は送信部、1202は制御部、1203は操作入力部、1204は表示部、1215はリモート制御装置、1211～1213は信号線、図14において、符号1301はマスター側録画・再生装置、1302は制御部、1303は映像、音声信号線、1304はチューナー、1305は録画スケジュール管理・機器制御部、1306は計時手段、1307は映像、音声記録再生部、1308はスイッチ、1309はメディア文字生成部、1300は表示装置、1301はメディア文字生成部、13002は送受信部、1310、1328～1330、1333、1334は映像・音声信号線、1311～1314および1317～1319、1326、1327、1331、1332は制御信号線、1315、1320、1323は音声信号線、131、6、1321、1322、1324は映像信号線、図15において、符号1401はスレーブ側録画・再生装置、1404はチューナー、1405は機器制御部、1407は映像・音声記録再生部、1408はスイッチ、1

1203から表示部1204の表示に従って録画予約したい番組の録画予約に必要な、チャネル、開始時刻、終了時刻および録画の回数等のデータを入力する。また、予め使用する録画・再生装置の台数や装置間の接続状態についても操作入力部1203から指定しておく。入力されたこれらのデータは、制御部1202で適宜マスター側録画・再生装置の制御用メッセージとして信号線1211を介して送信部へ送られ、送信部1201からマスター側録画・再生装置へ送られる。これを基にマスター側録画・再生装置で作成した録画スケジュールを表示装置の表示により確認し、修正が必要であれば操作入力部1203から必要事項を修正し、良ければ確認を入力する。操作入力部503で録画予約内容の確認を受け付けると信号線1213を介して制御部1202へ通知し、制御部1202ではこれを受けてマスター側録画・再生装置の制御用メッセージとして信号線1211を介して送信部へ送り、送受信部1201ではマスター側録画・再生装置へ送付する。

【0075】このときのマスター側録画・再生装置1102の動作について図14を用いて説明する。図14で、メディア型出力部13001では、録画・再生装置内のテープの装填の有無、装着されているテープの種類(録画時間など)を検出する。また、映像・音声記録再生部1307では映像信号と同期して記録してあるコントロール信号を基に現在のテープの位置を検出する。録画スケジュール管理・機器制御部1305では、これらの情報を信号線1331および信号線1317を介して取得するとともに、各録画・再生装置が装着しているテープの種類、およびテープの録画可能長さ等の情報について、予め定められた通信プロトコルに基づいて送受信部13002、信号線1327を基にして各録画・再生装置へ順次問い合わせることで、それら内部のメモリに記録する。

【0080】さらに、録画スケジュール管理・機器制御部1305では、受信部1303でリモート制御装置から受信した、使用する録画・再生装置の台数や装置間の接続状態の他、録画予約したい番組のチャネル、開始時刻、終了時刻および録画の回数等の情報を信号線1312を介して取得する。新しい録画予約を受け付ける毎に、予約された番組の長さ、時間帯、録画の画質、各録画・再生装置のテープの装填の有無、テープの種類、録画可能長さ(現在のテープ位置から算出した値またはリモート制御装置から受け取った情報)、各録画・再生装置間の接続状態等から、各装置毎に録画番組や録画モードを割り振り、その結果を文字コードにして信号線1319に出力する。文字生成部1309ではこの文字コードから各装置間の映像信号に変換して映像信号線1322に出力する。録画スケジュール管理・機器制御部1305では、これと同時にスイッチ1308に対して信号線1318を介して切替の指示を行い、スイッチ1

308では、この切替の指示に基づいて文字生成部1309からの映像出力1322を表示装置に接続されている映像信号線に出力する。受信部1303から信号線1312を介して録画スケジュールの確認を受け取ると、録画スケジュール管理・機器制御部1305では決定した各録画・再生装置毎の録画予約内容を内部メモリに保持する。

【0081】録画スケジュール管理・機器制御部1305では、このようにリモート制御装置からの制御情報や録画スケジュールに基づいて信号線1318を介してスイッチ1308の切替の指示を出し、これによりスタート1308では文字生成部1309から出力される映像信号1322または映像・音声記録再生部1307から出力される映像信号1324および音声信号1328～1330内該当するものを映像・音声信号線1323から信号線1322または映像・音声信号線に出力する。

【0082】さらに、録画スケジュール管理・機器制御部1305では、信号線1313を介して計時手段1306に各録画・再生装置毎の録画開始、終了時刻や再生開始、終了時刻を設定する。計時手段1306ではそれぞれ時刻について現在の時刻との差をメモリに保持し単位時間毎にメモリの値から一定値を減算することによって計時し、差が0になると信号線1313を介して録画スケジュール管理・機器制御部1305に通知する。

【0083】録画スケジュール管理・機器制御部1305では、計時手段1306からの通知を受け取ると、マスター側録画・再生装置に対するものかスレーブ側録画・再生装置に対するものかを判断し、スレーブ側録画・再生装置に対するものである場合、送受信部13002、信号線1327を基にして各録画・再生装置へ録画開始・終了、再生開始・終了、表示制御等の指示を送る。また、マスター側録画・再生装置に対するものである場合、録画開始時刻の通知を受け取ると、信号線1332を介してスイッチ13001に切替の指示を出し、スイッチ13001ではこの切替の指示により、録画スケジュールに基づいてチューナー1304からの映像信号1316と音声信号1315、他の2台の録画・再生装置からの映像・音声信号1333、1334の内いずれか一組を選択し、映像信号線1321および音声信号線1320に出力する。

【0084】また、これと同時に、録画スケジュール管理・機器制御部1305では映像・音声記録再生部1307に信号線1317を介して録画指示を送り、録画終了時刻の通知が来ると映像・音声記録再生部1307に映像信号線1317を介して停止の指示を送る。再生開始通知、再生終了通知を受け取った場合も同様に信号線1317を介して映像・音声記録再生部1307にそれぞれ再生指示、停止の指示を送る。映像・音声記録再生部1307では、録画指示を受け取ると映像信号線1321および音声信号線1320の映像・音声の録画を開始し

06に各録画・再生装置毎の録画開始、終了時刻や再生開始、終了時刻を設定する。計時手段1606ではそれぞれの時刻について現在の時刻との差をメモリに保持し単位時間毎にメモリの値から一定値を減算することで時間を計時し、差が0になると信号線1613を介して録画スケジューリング管理・機器制御部1605に通知する。

[1009]録画スケジューリング管理・機器制御部1605では、計時手段1606からの通知を受け取ると、送受信部16002、信号線1627を經由して当該録画・再生装置へ録画開始、終了、再生開始、終了、表示制御等の指示を送る。また、信号線1618を介してスイッチ1608に切替の指示を出し、スイッチ1608でこの切替の指示により、録画スケジューリングに基づいて内部マトリックス・スイッチを切り替えて、映像・音声入力1632～1635をそれぞれ切替する映像・音声出力1624、1636～1639に接続する。また、これと同時に、録画スケジューリング管理・機器制御部1605では送受信部16002、信号線1627を經由して当該録画・再生装置に録画指示を送り、録画終了時刻の通知が来ると停止の指示を送る。再生開始通知、再生終了通知を受け取った場合も同様信号線1627を經由して当該録画・再生装置にそれぞれ再生指示、停止の指示を送る。なお、他の録画・再生装置と連動して録画を行う場合、共通の同期信号とタイムコードの制御を行うことで録画の精度を上げることができるとは言うまでもない。

[1010]次に、録画・再生装置1502～1505の動作について図18を用いてさらに詳しく説明する。図18で、メディア駆動演出部17001では、録画・再生装置内のテープの装巻の有無、装巻されているテープの種類（録画時間など）を検出する。また、映像・音声記録再生部1707では映像信号に同期して記録してあるコントロール信号を基に現在のテープの位置を検出する。機器制御部1705では、これらの情報をもとに、信号線1731および信号線1717を介して取得するともに、信号線1734、送受信部17002、信号線1733を經由して録画・再生制御装置からの問い合わせがあると、予め定められた通信プロトコルに基づいてこれらの情報を提供する。

[1010]また、機器制御部1705では録画・再生制御装置からの表示制御の指示に基づいて信号線1732を介してスイッチ1700の切替の指示を出し、これによりスイッチ1708では映像・音声記録再生部1407から出力される映像信号1424および音声信号1423を映像・音声信号線1428～1430のいずれか該当する映像・音声信号線に出力する。

[1010]さらに、機器制御部1705では、信号線1734、送受信部17002、信号線1733を經由して録画・再生制御装置から録画開始の指示を受け取ると、信号線1732を介してスイッチ1700に切替の

指示を出し、スイッチ1700ではこの切替の指示により、チューナー1704からの映像信号1716と音声信号1715、他の録画・再生装置からの映像・音声信号1726の内の該当する入力信号を、映像信号線1721および音声信号線1720に出力する。また、これと同時に、機器制御部1705では映像・音声記録再生部1707に信号線1717を介して録画指示を送り、マスタ側録画・再生装置から録画終了の指示が来ると映像・音声記録再生部1707に信号線1717を介して映像指示を受け止める。再生開始通知、再生終了通知を受け取った場合も同様信号線1717を介して映像・音声記録再生部1707にそれぞれ再生指示、停止の指示を送る。

[1010]映像・音声記録再生部1707では、録画指示を受け取ると映像信号線1721および音声信号線1720の映像・音声の録画を開始し、停止の指示により録画を終了する。また、映像・音声記録再生部1707では、機器制御部1705から信号線1717を介して再生の指示を受けた場合、指定の位置までテープを巻戻し、または送って演出しを行い再生を開始し、停止の指示で再生を終了する。また、マスタ側録画・再生装置からチューナーからの番組録画の指示が来た場合、機器制御部1705では信号線1714を介してチューナー1704に対して指定されたチャネルの指定の指示を送り、これに基づいて、チューナー1704では映像信号線1710からの映像信号の内指定のチャネルの映像を分離して映像信号線1716および音声信号線1715を分離して映像信号および音声信号を出力する。なお、リモート制御装置1506の動作および表示装置1508の動作については実施の形態5と同様なので省略する。

[1010]ここで、実施の形態3において10図を使って説明したのと同様なスケジューリング制御を行うことにより、本発明によれば、複数の録画・再生装置で個別に録画を行うだけでは実現できない、複数の録画・再生装置の録画・再生機能をフルに生かした効果的な録画・編集作業が実現できる。

[1010]以上のように、本発明を用いることにより、第1に、複数の録画・再生装置の機能や、性能、装巻するメディアの状況などの情報を総合する事により、よりきめ細かい録画予約のスケジューリングを行うことが可能となる。

[1010]第2に、録画・再生装置と録画・再生制御装置がそれぞれ双方向の通信が可能な通信手段を具備することにより、複数の録画・再生装置の機能や、性能、装巻するメディアの状況などの情報を自動的にやり取りし、使い勝手が大幅に改善される。

[1010]第3に、録画・再生制御装置がそれぞれの機器の接続状況を把握していることにより、例えば録画

予約の空き時間を利用したブレンディング編集などのより高度なスケジューリングも可能になる。

[1010]第4に、録画・再生制御装置が、ユーザの再生、予約調整等の要求を判断し、所定の録画・再生装置に再生の指示を出すとともに、表示装置に対してその録画・再生装置の映像、音声出力を表示するように指示することにより、煩雑な操作が不要となる。

[1010]第5に、録画・再生装置と録画・再生制御装置がそれぞれ双方向の通信が可能な通信手段を具備することにより、録画・再生制御装置が録画・再生装置から情報を受けて、複数の録画・再生装置の機能や、性能、装巻するメディアの状況や、それぞれの機器の接続状況を把握することにより、よりスムーズに高度な録画スケジューリングを行うことが出来る。

[1010]第6に、マスタ側の録画・再生装置だけに計時手段とスケジューリング管理の機能を持たせることにより、多くのスレーブ側の録画・再生装置の構成を簡易化出来、全体として低コストな録画・再生システムを構築できる。

[1011]第7に、複数の録画・再生装置および表示装置間の映像・音声信号の入出力をマトリックススイッチで切替制御することにより、個々の録画・再生装置および表示装置の入出力端子を併用することなく指定の装置間で映像・音声信号の再生・表示やダビングを行うことが可能とするものである。

【図面の簡単な説明】

【図1】本発明の第1の実施の形態および第4の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図

【図2】本発明の第1の実施の形態および第4の実施の形態における録画・再生制御装置の構成を示す図

【図3】本発明の第1の実施の形態および第4の実施の形態における録画・再生装置の構成を示す図

【図4】本発明の第1の実施の形態および第4の実施の形態における表示装置の構成を示す図

【図5】本発明の第2の実施の形態における録画・再生制御装置の構成を示す図

【図6】本発明の第2の実施の形態における録画・再生装置の構成を示す図

【図7】本発明の第2の実施の形態における録画・再生制御装置と各録画・再生装置との間の制御情報のやり取りを示した図

【図8】本発明の第3の実施の形態における録画・再生装置の構成を示す図

【図9】本発明の第3の実施の形態および第5の実施の形態における録画・再生制御装置と録画・再生装置、表示装置の接続関係を示す図

【図10】本発明の第5の実施の形態における録画・再生装置の構成を示す図

【図11】本発明の第3の実施の形態および第5の実施

の形態における録画・再生のスケジューリングを説明するための図

【図12】本発明の第6の実施の形態におけるリモート制御装置、録画・再生制御装置、録画・再生装置、表示装置の接続関係を示す図

【図13】本発明の第6の実施の形態におけるリモート制御装置の構成を示す図

【図14】本発明の第6の実施の形態におけるマスタ側の録画・再生装置の構成を示す図

【図15】本発明の第6の実施の形態におけるスレーブ側の録画・再生装置の構成を示す図

【図16】本発明の第7の実施の形態におけるリモート制御装置、録画・再生制御装置、録画・再生装置、表示装置の接続関係を示す図

【図17】本発明の第7の実施の形態における録画・再生制御装置の構成を示す図

【図18】本発明の第7の実施の形態における録画・再生装置の構成を示す図

【図19】従来例における遠隔制御装置の構成図

【符号の説明】

101 分送器

102～104 録画・再生装置

105 録画・再生制御装置

106 表示装置

110～113、118～120 映像・音声信号線

114～117 制御信号線

201 送信部

202 録画スケジューリング管理部

203 操作入力部

204 表示部

211～213 信号線

301 録画・再生装置

302 識別コード設定手段

303 受信部

304 チューナ

305 機器制御部

306 計時手段

307 映像・音声記録再生部

308 スイッチ

309 文字生成部

310 映像・音声信号線

311～314、317～319 制御信号線

315、320、323 音声信号線、

316、321、322、324 映像信号線

401 映像装置

402 受信部

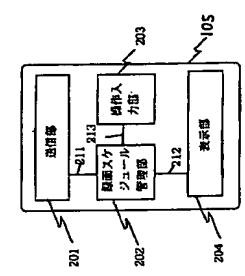
403 表示制御部

404 音声出力部

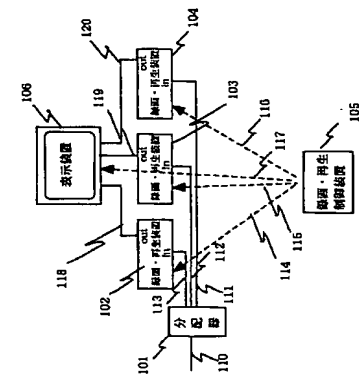
405 文字生成部

- 1415、1420、1423 音声信号線
- 1416、1421、1424 映像信号線
- 1501 分配器
- 1502~1504 録画・再生装置
- 1506 リモート制御装置
- 1507 録画・再生制御装置
- 1508 表示装置
- 1510~1514、1517~1125 映像・音声信号を送信映像・音声信号線
- 1515、1516 制御信号線
- 1601 録画・再生制御装置
- 16002 送受信部
- 1603 受信部
- 1605 録画スケジュール管理・機器制御部
- 1606 計時手段
- 1608 スイッチ
- 1609 文字生成部
- 1612~1614、1618、1619、1626、1627 信号線
- 1622 映像信号線
- 1624、1632~1635、1636~1639 映像・音声信号線
- 1625 制御信号線
- 1701 録画・再生装置
- 1700 スイッチ
- 17001 メディア種別検出部
- 17002 送受信部
- 1704 チューナ
- 1705 機器制御部
- 1707 映像・音声記録再生部
- 1710、1726 映像・音声信号線
- 1714、1717、1731、1732、1733、1734 信号線
- 1715、1720、1723 音声信号線
- 1716、1721、1724 映像信号線
- 1801 指定事項入力部
- 1802 録画順位入力部
- 1803 操作部
- 1804 テープ情報入力部
- 1805 制御部
- 1806 記憶部
- 1807 送信コード生成部
- 1808 送信部

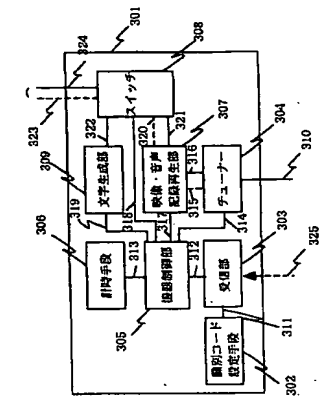
【図2】



【図1】

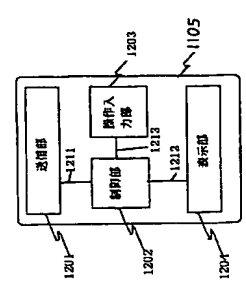


【図3】

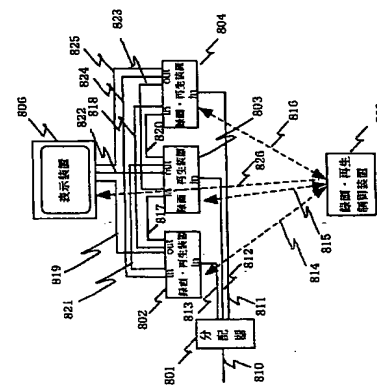


- 906 計時手段
- 907 映像・音声記録再生部
- 908 スイッチ
- 909 文字生成部
- 9001 メディア種別検出部
- 910、926~930 映像・音声信号線
- 911~914、917~919、931、932 制御信号線
- 915、920、923 音声信号線
- 916、921、922、924 映像信号線
- 1101 分配器
- 1102~1104 録画・再生装置
- 1105 リモート制御装置
- 1106 表示装置
- 1110~1113、1116~1124 映像・音声信号を送信映像・音声信号線
- 1114、1115 制御信号線
- 1201 送信部
- 1202 制御部
- 1203 操作入力部
- 1204 表示部
- 1211~1213 信号線
- 1301 マスター側録画・再生装置
- 1302 識別コード設定手段
- 1303 受信部
- 1304 チューナ
- 1305 録画スケジュール管理・機器制御部
- 1306 計時手段
- 1307 映像・音声記録再生部
- 1308 スイッチ
- 1309 文字生成部
- 1300 スイッチ
- 13001 メディア種別検出部
- 13002 送受信部
- 1310、1328~1330、1333、1334 映像・音声信号線
- 1311~1314、1317~1319 制御信号線
- 1326、1327、1331、1332 制御信号線
- 1315、1320、1323 音声信号線
- 1316、1321、1322、1324 映像信号線
- 1401 スレーブ側録画・再生装置
- 1404 チューナ
- 1405 機器制御部
- 1407 映像・音声記録再生部
- 1408 スイッチ
- 1300 スイッチ
- 14001 メディア種別検出部
- 1410、1426~1430 映像・音声信号線
- 1411~1412、1414、制御信号線
- 1417~1418、1431~1434 制御信号線
- 406 スイッチ
- 407 映像・音声記録再生部
- 410、414~417、420、422 制御信号線
- 411~413 映像・音声信号線
- 418 音声信号線
- 419、421 映像信号線
- 501 送受信部
- 502 録画スケジュール管理部
- 503 操作入力部
- 504 表示部
- 511~513 信号線
- 601 録画・再生装置
- 602 識別コード設定手段
- 603 受信部
- 604 チューナ
- 605 機器制御部
- 606 計時手段
- 607 映像・音声記録再生部
- 608 スイッチ
- 609 文字生成部
- 6001 メディア種別検出部
- 610 映像・音声信号線
- 611~614、617~619、631 制御信号線
- 615、620、623 音声信号線
- 616、621、622、624 映像信号線
- 701 録画・再生装置
- 702 識別コード設定手段
- 703 受信部
- 704 チューナ
- 705 機器制御部
- 706 計時手段
- 707 映像・音声記録再生部
- 708 スイッチ
- 709 文字生成部
- 710、726~730 映像・音声信号線
- 711~714、717~719、732 制御信号線
- 715、720、723 音声信号線
- 716、721、722、724 映像信号線
- 801 分配器
- 802~804 録画・再生装置
- 805 録画・再生制御装置
- 806 表示装置
- 810~813、817~825 映像・音声信号を送信映像・音声信号線
- 814~817、826 制御信号線
- 901 録画・再生装置
- 902 識別コード設定手段
- 903 送受信部
- 904 チューナ
- 905 機器制御部

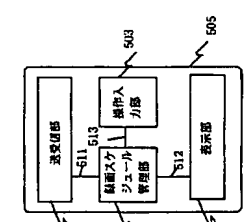
【図13】



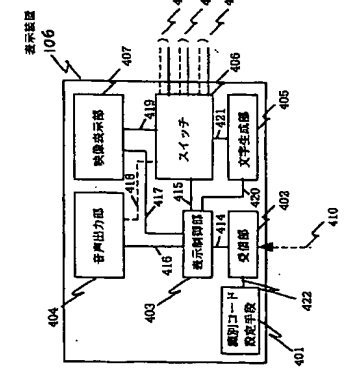
【図9】



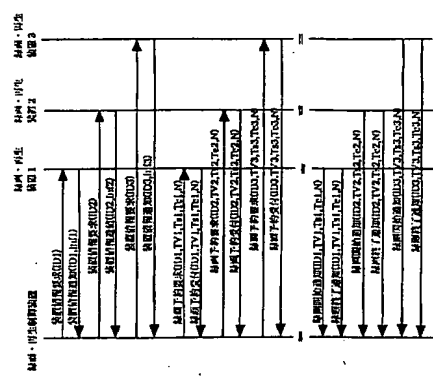
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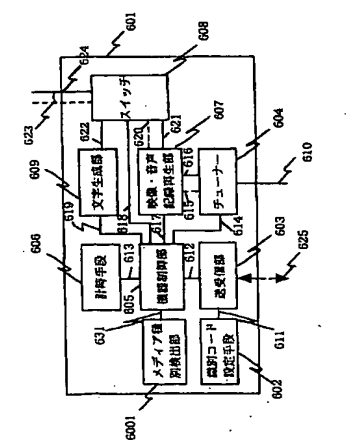
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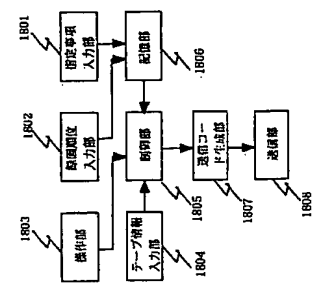
【図7】



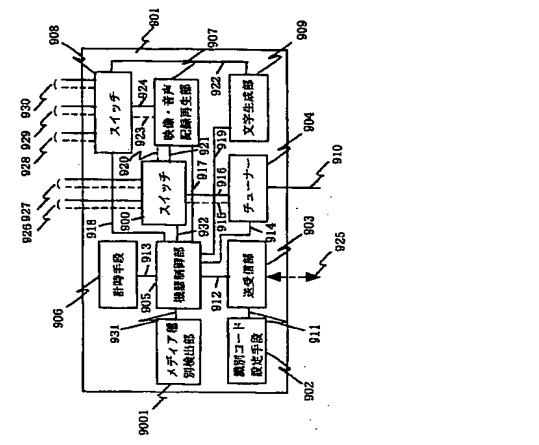
【図6】



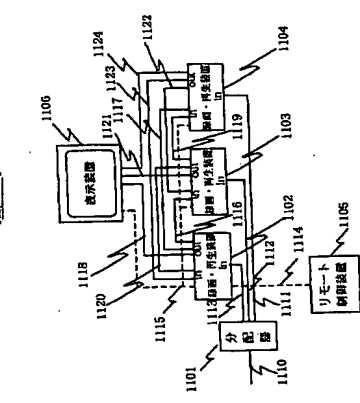
【図19】



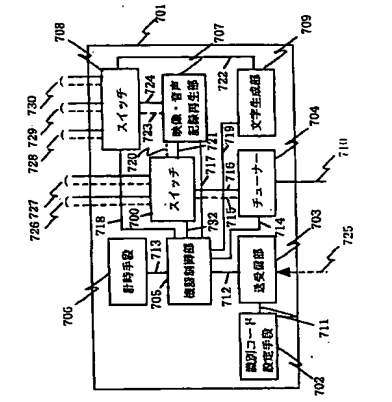
【図10】



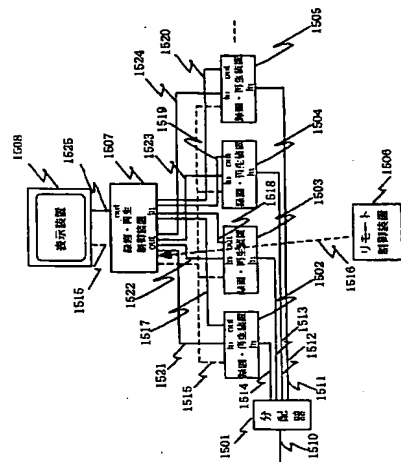
【図12】



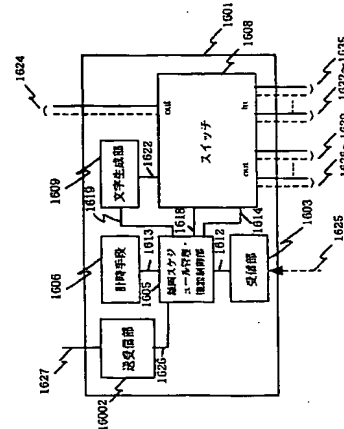
【図8】



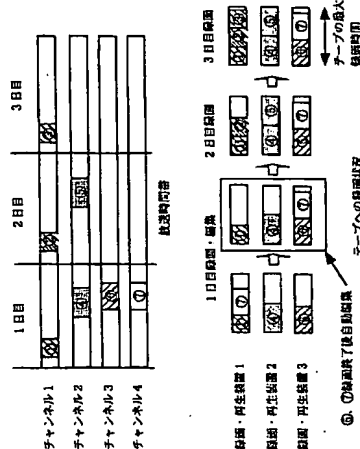
【図1.6】



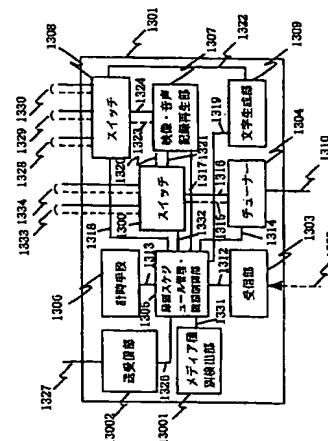
【図1.7】



【図1.1】



【図1.4】



【図1.5】

